ARTICLE 6.1. LAND APPLICATION OF BIOSOLID, INDUSTRIAL WASTE PRODUCT, AND POLLUTANT-BEARING WATER

RULE 1. GENERAL PROVISIONS

327 IAC 6.1-1-1 ----- General provisions: purpose

(a) The purpose of this article is to establish procedures, requirements, and standards to implement IC 13-18-3. This article is being promulgated for the purpose of protecting and enhancing the quality of Indiana's environment and protecting the public health, safety, and well-being of its citizens.

(b) This article regulates the disposal of any biosolid, contaminant that is an industrial waste product, or pollutant-bearing water by application upon or incorporation into the soil. This article establishes standards for the following:

(1) General requirements.

(2) Site requirements.

(3) Pollutant limits.

(4) Pathogen treatment requirements.

(5) Vector attraction reduction requirements.

(6) Monitoring and analysis requirements.

(7) Record keeping requirements.

(8) Reporting requirements.

[As added at: 21 IR 3776.]

327 IAC 6.1-1-2 ----- General provisions: federal references

Unless otherwise indicated, the following references to federal regulations apply throughout this article:

(1) "Clean Water Act" is the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., as amended by the federal Water Quality Act of 1987, P.L. 100-4.

(2) "Environmental Protection Agency" or "EPA" is the United States Environmental Protection Agency.

(3) "Resource Conservation and Recovery Act" or "RCRA" is the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, by the Hazardous and Solid Waste Amendments of 1984, as amended, 42 U.S.C. §6901, et seq.

[As added at: 21 IR 3776.]

327 IAC 6.1-1-3 ----- General provisions: applicability

(a) This article applies to the following:

(1) Any person who prepares biosolid, industrial waste product, or pollutant-bearing water for land application or marketing and distribution in Indiana.

(2) Any person who applies biosolid, industrial waste product, or pollutant-bearing water to the land in Indiana.

(3) Biosolid, industrial waste product, or pollutant-bearing water applied to the land in Indiana.

(4) Biosolid or industrial waste product that is marketed or distributed for use as soil or soil amendment.

(5) Land in Indiana where biosolid, industrial waste product, or pollutant-bearing water is applied.

(6) Storage structures for any material regulated under this article.

(b) A land application permit is required for the disposal in Indiana of any biosolid, industrial waste product, or pollutant-bearing water by application upon or incorporation

into the soil except for the exclusions listed under subsection (c).

(c) This article does not apply to the following:

(1) Materials that are:

(A) Animal manures.

(B) Not a solid waste as defined under 329 IAC 10-2-174.

(C) Disposed of under 329 IAC 10-3-1(1), 329 IAC 10-3-1(3) through 329 IAC 10-3-1(15), and 327 IAC 7.

(D) Determined to be hazardous waste in accordance with 329 IAC 3.1.

(E) Grit, including sand, gravel, cinders, or other materials with a high specific gravity.

(F) Screenings, including relatively large materials such as rags, generated during preliminary treatment of domestic sewage in a treatment works.

(G) Industrial storm water that does not exceed the pollut ant concentrations in Table 10 in 327 IAC 6.1-7-1(d).

(2) Persons who apply biosolid or industrial waste product that is prepared or generated by another person in accordance with the terms of a marketing and distribution program permitted under 327 IAC 6.1-5.

(3) Land that receives only biosolid or industrial waste product prepared or generated in accordance with the terms of a marketing and distribution program permitted under 327 IAC 6.1-5.

(4) The selection of biosolid, industrial waste product, or pollutant-bearing water use or disposal practice. The determination of the manner in which biosolid, industrial waste product, or pollutant-bearing water is used or disposed is a local determination.

(5) Industrial storm water that:

(A) does not meet or exceed the pollutant limits in Table 10 in 327 IAC 6.1-7-1(d); or

(B) is regulated by:

(i) a storm water pollution prevention plan under 327 IAC 15-6; or

(ii) an NPDES permit under 327 IAC 5-4-6.

(6) Lawn irrigation at wastewater treatment facilities that:

(A) have a valid NPDES permit under 327 IAC 5;

(B) are not in violation of any discharge limits;

(C) have restricted public access to the area to be irrigated; and

(D) disinfect the domestic wastewater prior to application to the facility grounds.

[As added at: 21 IR 3776.]

327 IAC 6.1-1-4 ----- General provisions: enforcement

No person shall conduct activities for which requirements are established in this rule except in accordance with such requirements. The administration and enforcement of this article shall be in accordance with IC 4-21.5, IC 13-11, 13-14 *[sic., IC 13-14]*, IC 13-15-7, IC 13-24, and IC 13-30-3.

[As added at: 21 IR 3777.]

327 IAC 6.1-1-5 ----- General provisions: penalties

Penalties for violations of this article are as outlined in IC 13-14-12 and IC 13-30.

[As added at: 21 IR 3777.]

327 IAC 6.1-1-6 ----- General provisions: access to information

(a) In accordance with this article, any person who is required to comply with such regulatory provisions shall:

(1) establish and maintain records;

(2) make reports;

(3) install, use, and maintain monitoring equipment or methods;

(4) sample effluents or other material; and

(5) provide other information applicable to this article.

(b) The commissioner, or the commissioner's authorized representative, upon presentation of proper credentials:

(1) shall have a right of entry to, upon, or through any premises, public or private, in which records, reports, monitoring or treatment equipment or methods, samples, or other information required to be maintained or provided under subsection (a) are located; and

(2) shall, during normal business hours inspect for purposes of assessing compliance with this article, have access to:

(A) view or copy any records;

(B) inspect any equipment or method; and

(C) sample any effluent or other material required under subsection (a).

[As added at: 21 IR 3777.]

327 IAC 6.1-1-7 ----- General provisions: relationship to other regulations

(a) Disposal of a biosolid or industrial waste product in a municipal solid waste landfill unit, as defined in 329 IAC 10-2-117, that complies with the requirements in 329 IAC 10 and the municipal solid waste landfill permit, constitutes compliance with Section 405(d) of the Clean Water Act. Any person who prepares a biosolid or industrial waste product that is disposed in a municipal solid waste landfill unit shall ensure that the biosolid or industrial waste product meets the requirements in 329 IAC 10-7 and 329 IAC 10-8 concerning the quality of biosolid or industrial waste product disposed in a municipal solid waste landfill unit.

(b) Any person who prepares or applies a biosolid, industrial waste product, or pollutant-bearing water that is applied to land in a delineated wellhead protection area shall comply with any applicable requirements under 327 IAC 8-4.1.

[As added at: 21 IR 3777.]

RULE 2. DEFINITIONS

327 IAC 6.1-2-1 ----- Definitions: applicability

In addition to the definitions contained in IC 13- 11-2 and 327 IAC 1, the definitions in this rule apply throughout this article.

[As added at: 21 IR 3777.]

327 IAC 6.1-2-2 ----- Definitions: "aerobic digestion" or "aerobic process" defined

"Aerobic digestion" or "aerobic process" means the biochemical decomposition of organic matter into carbon dioxide and water by micro-organisms in the presence of oxygen.

[As added at: 21 IR 3776.]

327 IAC 6.1-2-3 ----- Definitions: "agricultural land" defined

"Agricultural land" means land used for the following purposes:

(1) Production of a food crop.

(2) Production of a feed crop.

(3) Production of a fiber crop.

(4) Production of trees for harvest.

(5) Pasture for animals.

[As added at: 21 IR 3778.]

327 IAC 6.1-2-4 ----- Definitions: "anaerobic digestion" or "anaerobic process" defined

"Anaerobic digestion" or "anaerobic process" means the biochemical decomposition of organic matter into methane gas and carbon dioxide by micro-organisms in the absence of oxygen.

[As added at: 21 IR 3778.]

327 IAC 6.1-2-5 ----- Definitions: "annual pollutant loading rate" defined

"Annual pollutant loading rate" means the maximum amount of an inorganic pollutant that can be applied to any land during a three hundred sixty-five (365) day period.

[As added at: 21 IR 3778.]

327 IAC 6.1-2-6 ----- Definitions: "beneficial use" defined

"Beneficial use" means the use of a material for fertilizing or soil conditioning properties to:

(1) provide nutrients for growing plants or crops;

(2) increase organic matter;

(3) provide pH adjustment capabilities; or

(4) provide other benefits to the soil or crops as shown to the satisfaction of the commissioner through an approved research or demonstration project under 327 IAC 6.1-4-19.

[As added at: 21 IR 3778.]

327 IAC 6.1-2-7 ----- Definitions: "biosolid" defined

(a) "Biosolid" means solid, semisolid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Examples of biosolid include the following:

(1) Scum or solids removed in primary, secondary, or advanced wastewater treatment processes.

(2) A material derived from biosolid.

(3) An industrial waste product that contains domestic sewage or material under (1) or (2).

(b) Biosolid does not include ash generated during the firing of biosolid in a biosolid incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

[As added at: 21 IR 3778.]

327 IAC 6.1-2-8 ----- Definitions: "cation exchange capacity" defined

"Cation exchange capacity" means the sum of exchangeable cations a soil can absorb expressed in milliequivalents per one hundred (100) grams of soil as determined by sampling the soil to the depth of cultivation, sludge waste product placement, or wastewater placement, whichever is greater, and analyzing by the summation method for distinctly acid soils* or the sodium acetate method for neutral, calcareous, or saline soils*.

*The summation method for distinctly acid soils and the sodium acetate method for neutral, calcareous, or saline soils can be found in "Methods of Soil Analysis, Agronomy Monograph No. 9.", C.A. Black, ed., pp. 149-157, 1982, available from American Society of Agronomy, Soil Science of America, Inc., 677 South Segoe Road, Madison, Wisconsin 53711. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Mangement, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3778.]

327 IAC 6.1-2-9 ----- Definitions: "cereal grain" defined

"Cereal grain" means food crops such as wheat, oats, rye, and barley.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-10 --- Definitions: "commissioner" defined

"Commissioner" refers to the commissioner of the department created under IC 13-13-1-1.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-10.1 - Definitions: "contaminant" defined

"Contaminant" means a contaminant as defined in IC 13-11-2-42.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-11 ---- Definitions: "cumulative pollutant loading rate" defined

"Cumulative pollutant loading rate" means the maximum amount of an inorganic pollutant that can be applied to any land.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-12 --- Definitions: "department" defined

"Department" means the department of environmental management created under IC 13-13.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-13 --- Definitions: "dewatered" defined

"Dewatered" means the removal of free liquid from the biosolid or industrial waste product as determined by Method 9095* (Paint Filter Liquids Test).

*Method 9095 may be found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 [Third Edition, November 1986, as amended by Updates 1 (July 1992), 2 (September 1994), 2A (August 1993), and 2B (January 1995)], available from U.S. EPA. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-14 --- Definitions: "discharge" defined

"Discharge" means any addition of any pollutant, or combination of pollutants, into any waters of the state from a point source such as any discernible, confined, and discrete conveyance, including the following:

(1) Pipe.

(2) Channel.

(3) Tunnel.

(4) Conduit.

(5) Well.

(6) Discrete fissure.

(7) Container.

(8) Rolling stock.

(9) Vessel.

(10) Other floating craft from which pollutants are or may be discharged.

The term does not include return flow from irrigated agriculture or agricultural storm water.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-15 --- Definitions: "disinfection" defined

Sec. 15. "Disinfection" means the:

(1) destruction;

(2) neutralization;

(3) inhibition;

(4) inactivation; or

(5) removal;

of pathogenic micro-organisms by chemical, physical, or biological means.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-16 --- Definitions: "domestic sewage" defined

"Domestic sewage" means waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

[As added at: 21 IR 3779.]

327 IAC 6.1-2-17 --- Definitions: "domestic wastewater" defined

"Domestic wastewater" means the treated effluent from a treatment works that treats domestic sewage.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-18 --- Definitions: "dry weight basis" defined

"Dry weight basis" means the calculation of weight based on having been dried at one hundred three degrees Celsius (103%C) to one hundred five degrees Celsius (105%C) until reaching a constant weight.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-19 --- Definitions: "feed crops" defined

"Feed crops" means crops produced primarily for consumption by animals.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-20 --- Definitions: "fiber crops" defined

"Fiber crops" means crops produced primarily for fiber, such as flax and cotton.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-21 --- Definitions: "flood plain" defined

"Flood plain" means land that is subject to flooding as determined by the United States Department of Agriculture (USDA) Natural Resources Conservation Service.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-22 --- Definitions: "food crops" defined

"Food crops" means crops grown for:

(1) human consumption; or

(2) feed crops for animals whose products are consumed by humans.

These crops include fruits, vegetables, grains, and tobacco.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-23 --- Definitions: "forest" defined

"Forest" means a tract of land with a dense growth of trees, plants, and underbrush.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-24 --- Definitions: "freeboard" defined

"Freeboard" means the distance between the top of the stored biosolid, industrial waste product, or pollutant-bearing water and the overflow level of the storage structure.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-25 --- Definitions: "ground water" defined

"Ground water" means water below the land surface in the saturated zone.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-26 --- Definitions: "hazardous waste" defined

"Hazardous waste" means waste regulated under 329 IAC 3.1.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-27 --- Definitions: "incorporated into the soil" defined

"Incorporated into the soil" means the mixing of the biosolid or industrial waste product with the surface soil using standard agricultural practices such as tillage.

[As added at: 21 IR 3780.]

327 IAC 6.1-2-28 --- Definitions: "industrial process wastewater" defined

"Industrial process wastewater" means liquid waste that is:

(1) generated by industrial or commercial facilities; and

(2) does not contain domestic sewage.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-29 --- Definitions: "industrial storm water" defined

"Industrial storm water" means storm water that is regulated under 327 IAC 15-6.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-30 --- Definitions: "industrial waste product" defined

"Industrial waste product" means the following:

(1) Material that is not considered biosolid or pollutant-bearing water under this article.

(2) Material that is generated as waste in the production process and may be disposed of through:

(A) surface application;

(B) injection; or

(C) incorporation into the soil.

(3) Material that meets the following criteria:

(A) Is a solid waste as defined under 329 IAC 10-2-174.

(B) Does not include material from any processes listed in 329 IAC 10-3-1.

(C) Is used for a beneficial use as defined under section 6 of this rule.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-31 --- Definitions: "injection" defined

"Injection" means the direct, uniform placement of biosolid, industrial waste product, or pollutant-bearing water beneath the surface of the soil using equipment specifically for this purpose.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-32 --- Definitions: "land application" defined

"Land application" means the beneficial use of a biosolid, industrial waste product, or pollutant-bearing water by:

(1) spraying or spreading onto the land surface;

(2) injection below the land surface; or

(3) incorporation into the soil.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-33 --- Definitions: "land application operation" defined

"Land application operation" means an operation in which biosolid, industrial waste product, or pollutant-bearing water prepared or generated by a person is disposed of by land application.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-34 --- Definitions: "land with a high potential for public exposure" defined

(a) "Land with a high potential for public exposure" means land that:

(1) does not have restricted access;

(2) is easily accessible to the public; or

(3) is used by the public during normal work or recreational activities.

(b) Examples include, but are not limited to, the following:

(1) Public parks and forests.

(2) Athletic fields.

(3) Cemeteries.

(4) Agricultural land that is:

(A) used for growing food crops; and

(B) open to the public for any period of time.

(5) Plant nurseries.

(6) Turf farms.

(7) Golf courses.

(8) Strip mine reclamation areas located in a populated area or accessible to the public.

(9) Industrial sites located in a populated area or accessible to the public.

(10) Construction sites located in a populated area or accessible to the public.

(11) Other sites that the commissioner may consider to have a high potential for public exposure based on any of the following:

(A) Existing public roads.

(B) Population density.

(C) Recreational opportunity.

(D) Infrastructure development.

(E) Level of management of property.

[As added at: 21 IR 3781.]

327 IAC 6.1-2-35 --- Definitions: "land with a low potential for public exposure" defined

(a) "Land with a low potential for public exposure" means land that:

(1) has restricted access;

(2) is inaccessible to the public; or

(3) is not used by the public during normal work or recreational activities.

(b) Examples include, but are not limited to, the following:

(1) Agricultural land, except land in section 34(4) *[sic., section 34(b)(4)]* of this rule.

(2) Forest not included in section 34(1) *[sic., section 34(b)(1)]* of this rule.

(3) Solid waste land disposal facilities as defined in 329 IAC 10-2-176.

(4) Strip mines not located in a populated area or accessible to the public.

(5) Industrial sites not located in a populated area or accessible to the public.

(6) Construction sites not located in a populated area or accessible to the public.

(7) Other sites that the commissioner may consider to have a low potential for public

exposure based on any of the following:

(A) Existing public roads.

(B) Population density.

(C) Recreational opportunity.

(D) Infrastructure development.

(E) Level of management of property.

[As added at: 21 IR 3782.]

327 IAC 6.1-2-36 --- Definitions: "mean cell residence time" defined

"Mean cell residence time" means solids retention time as determined in Chapter 9 of "Control of Pathogens and Vector Attraction in Sewage Sludge", EPA/625/R-92/013, December 1992.

[As added at: 21 IR 3782.]

327 IAC 6.1-2-37 --- Definitions: "municipal" defined

"Municipal" means a reference to the following:

(1) A city.

(2) A town.

(3) A county.

(4) A district.

(5) An association.

(6) An intermunicipal agency of two (2) or more of the entities in subdivisions (1) through (5) created by or under state law.

(7) An Indian tribe.

(8) An authorized Indian tribal organization having jurisdiction over biosolid, industrial waste product, or pollutant-bearing water management.

(9) A designated and approved management agency under Section 208 of the Clean Water Act, as amended.

(10) A special district created under state law, such as:

(A) a water district;

(B) a sewer district;

(C) a solid waste management district;

(D) an utility district;

(E) a drainage district or similar entity; or

(F) an integrated waste management facility as defined in Section 201(e) of the Clean Water Act, as amended, that has as one (1) of its principal responsibilities the treatment, transport, use, or disposal of biosolid, industrial waste product, or pollutant-bearing water.

[As added at: 21 IR 3782.]

327 IAC 6.1-2-38 --- Definitions: "pasture" defined

"Pasture" means land on which animals feed directly on vegetation, such as legumes, grasses, grain stubble, or stover.

[As added at: 21 IR 3782.]

327 IAC 6.1-2-39 --- Definitions: "pathogenic organisms" defined

"Pathogenic organisms" means disease-causing organisms, including the following:

(1) Certain bacteria.

(2) Protozoa.

(3) Viruses.

(4) Viable helminth ova.

(5) Fungi.

(6) Other disease-causing organisms.

[As added at: 21 IR 3782.]

327 IAC 6.1-2-40 --- Definitions: "permit" defined

"Permit" means the following:

(1) A permit.

(2) A determination related to a:

(A) permit;

(B) license;

(C) registration; or

(D) certificate.

(3) Any other type of authorization required before construction or operation that may be issued by the commissioner under IC 13-15, IC 13-18, or IC 13-19.

[As added at: 21 IR 3782.]

327 IAC 6.1-2-41 --- Definitions: "person" defined

"Person" means a person as defined in IC 13-11-2-158(a).

[As added at: 21 IR 3783.]

327 IAC 6.1-2-42 --- Definitions: "person who applies" defined

"Person who applies" means any person who land applies a material under this article.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-43 --- Definitions: "person who prepares" defined

(a) "Person who prepares" means:

(1) the person who generates any material for application to the land and regulated under this article; or

(2) the person who derives a new material for application to the land from other materials regulated under this article.

(b) The term includes any person that mixes two (2) or more biosolids, industrial waste products, or pollutant-bearing waters.

(c) The term does not include a hazardous waste generator as regulated by 329 IAC 3.1 or a solid waste generator as defined under 329 IAC 10-2-78.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-44 --- Definitions: "pH" defined

"pH" means the logarithm of the reciprocal of the hydrogen ion concentration.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-45 --- "Pollutant" defined

"Pollutant" means an organic substance, an inorganic substance, a combination of organic and inorganic substances, or a pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could, on the basis of information available to the commissioner, cause:

(1) death;

(2) disease;

(3) behavioral abnormalities;

(4) cancer;

(5) genetic mutations;

(6) physiological malfunctions, including malfunction in:

(A) reproduction; or

(B) physical deformations in either organisms or offspring of the organisms.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-46 --- Definitions: "pollutant-bearing water" defined

"Pollutant-bearing water" means domestic wastewater, industrial process wastewater, or industrial storm water.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-47 --- Definitions: "pollutant limit" defined

"Pollutant limit" means any of the following:

(1) A numerical value that describes the amount of a pollutant allowed per unit amount of biosolid, industrial waste product, or pollutant-bearing water.

(2) A numerical value that describes the amount of a pollutant that can be applied to a unit area of land.

(3) A numerical value that describes the volume of a biosolid, industrial waste product, or pollutant-bearing water that can be applied to a unit area of land.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-48 --- Definitions: "public building" defined

"Public building" means any publicly or privately owned church, nursing home, hospital, school, or commercial or industrial building.

[As added at: 21 IR 3783.]

327 IAC 6.1-2-49 --- Definitions: "set aside" or "idle" defined

"Set aside" or "idle" means agricultural land upon which no crop is grown during a crop season.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-50 --- Definitions: "specific oxygen uptake rate" or "SOUR" defined

"Specific oxygen uptake rate" or "SOUR" means the mass of oxygen consumed per unit time per unit mass of percent total solids, dry weight basis, in the biosolid.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-51 --- Definitions: "staging" defined

"Staging" means the temporary placement of a dewatered biosolid or industrial waste product in a pile for less than twenty-four (24) hours at the site where the dewatered biosolid or industrial waste product will be land applied.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-52 --- Definitions: "state" defined

"State" means the state of Indiana.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-53 --- Definitions: "static aerated piles" defined

"Static aerated piles" means piles of biosolid that is aerated using a forced-aeration system installed under the piles to maintain a minimum oxygen level throughout the compost mass.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-54 --- Definitions: "stockpiling" defined

"Stockpiling" means the temporary placement of a dewatered biosolid or industrial waste product in a pile for more than twenty-four (24) hours but less than five (5) working days at the land application site in accordance with an approved management plan.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-55 --- Definitions: "storage" defined

"Storage" means containment of biosolid, industrial waste product, or pollutant-bearing water for a period of two (2) years or less at the following:

(1) Treatment plant.

(2) Generating facility.

(3) Approved off-site storage structure or earthen lagoon.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-56 --- Definitions: "total solids" defined

"Total solids" means the fraction, often expressed as a percentage, of a material that remains in the biosolid or industrial waste product as residue when the biosolid or industrial waste product is dried at one hundred three degrees Celsius (103%C) to one hundred five degrees Celsius (105%C) until reaching a constant weight.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-57 --- Definitions: "treatment works" defined

"Treatment works" means any device or system used to treat, including recycle and reclaim, either domestic sewage, industrial waste of a liquid nature, or a combination of domestic sewage and industrial waste of a liquid nature.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-58 --- Definitions: "unstabilized solids" defined

"Unstabilized solids" means the organic mate rials in biosolid that have not been treated in:

(1) an aerobic; or

(2) anaerobic;

treatment process.

[As added at: 21 IR 3784.]

327 IAC 6.1-2-59 --- Definitions: "vector attraction" defined

"Vector attraction" means the characteristic of biosolid that attracts:

(1) rodents;

(2) flies;

(3) mosquitos; or

(4) other organisms capable of transporting infectious agents.

[As added at: 21 IR 3785.]

327 IAC 6.1-2-60 --- Definitions: "volatile solids" defined

"Volatile solids" means the amount of the percent total solids in biosolid or pollutant-bearing water lost when the biosolid or pollutant-bearing water is combusted at five hundred fifty degrees Celsius (550%C) in the presence of excess oxygen.

[As added at: 21 IR 3785.]

327 IAC 6.1-2-61 --- Definitions: "waters of the state" defined

(a) "Waters of the state" means such accumulations of water, surface and underground, natural and artificial, public and private, or parts thereof, which are wholly or partially

within, flow through, or border upon this state.

(b) The term does not include any private pond or any off-stream pond, reservoir, or facility built for reduction or control of pollution or cooling of water prior to discharge unless the discharge therefrom causes or threatens to cause water pollution.

[As added at: 21 IR 3785.]

327 IAC 6.1-2-62 --- Definitions: "wetlands" defined

"Wetlands" means those areas that are inun dated or saturated by surface water or ground water at a frequency and duration to support and that, under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include the following:

(1) Swamps.

(2) Marshes.

(3) Bogs.

(4) Similar areas.

[As added at: 21 IR 3785.]

327 IAC 6.1-2-63 --- "windrow composting" defined

"Windrow composting" means biosolid that is composted in long rows that are aerated by convective air movement and diffusion and turned periodically as required in 327 IAC 6.1-4-14 by mechanical means to expose the organic matter to ambient oxygen.

[As added at: 21 IR 3785.]

327 IAC 6.1-2-64 --- "within-vessel" defined

"Within-vessel" means biological stabilization of biosolid under controlled aerobic conditions in a closed vessel or an enclosed structure.

[As added at: 21 IR 3785.]

RULE 3. LAND APPLICATION; GENERAL REQUIREMENTS

327 IAC 6.1-3-1 ----- General requirements: permit applications

(a) Permit applications under this article must be submitted on forms and in a format prescribed by the commissioner and include applicable accompanying documentation as described on the forms.

(b) Except for permit applications submitted in accordance with section 4(c) or 4(d) of this rule, a permit application must be submitted at least one hundred eighty (180) days prior to the proposed commencement of the operation.

(c) Except for permit applications submitted in accordance with section 4(c) or 4(d) of this rule, a permit application for renewal of an existing permit must be submitted at least one hundred eighty (180) days prior to the expiration of the existing permit.

(d) The commissioner may deny a permit application, including a renewal permit, or place conditions on a permit for the following:

(1) The applicant has been convicted of a crime under IC 13-30-6 or IC 36-9-30-35.

(2) The commissioner, under IC 13-15-7, has revoked the applicant's previous permit to operate under:

(A) this article; or

(B) 327 IAC 6, which was repealed in 1998.

(3) The applicant is, at the time of the permit application or permit decision, not in compliance with the Environmental Protection Acts, or regulations promulgated thereunder, or has a history of repeated violations of the Acts or regulations or material permit conditions that evidence an inability or unwillingness to comply with this article or a permit.

(e) Proposals for equivalent methods for meeting requirements may be submitted for approval to the commissioner with the permit application for the following:

(1) Site restrictions in 327 IAC 6.1-4-6 and 327 IAC 6.1-7-5.

(2) The storage requirement in 327 IAC 6.1-4-8(a) and 327 IAC 6.1-7-9.

(3) Nutrient loading rates in 327 IAC 6.1-4-10.

(4) Vector attraction reduction requirements in 327 IAC 6.1-4-15.

(5) Monitoring and analysis requirements in 327 IAC 6.1-4-16.

(f) A management plan must be submitted to the commissioner with the permit application if any of the following are applicable:

(1) The management practice in 327 IAC 6.1-4-7(l) and 327 IAC 6.1-7-6(j).

(2) The stockpiling requirement in 327 IAC 6.1-4-8(f).

(3) Marketing and distribution in 327 IAC 6.1-5.

[As added at: 21 IR 3785.]

327 IAC 6.1-3-2 ----- General requirements: terms of land application permits

A land application permit shall conform with the following:

(1) The technical criteria and other requirements of the applicable sections of this article.

(2) If applicable, approved equivalent methods for meeting requirements under section 1(e) of this rule that are developed by the applicant for the proposed operation.

(3) If applicable under section 1(f) of this rule, an approved management plan specifically developed by the applicant for the proposed operation.

[As added at: 21 IR 3786.]

327 IAC 6.1-3-3 ----- General requirements: discharges from land application operations

There must be no discharge into the waters of the state from a land application operation except under a valid National Pollutant Discharge Elimination System (NPDES) permit issued in accordance with 327 IAC 5.

[As added at: 21 IR 3786.]

327 IAC 6.1-3-4 ----- General requirements: permit duration and transition requirements

(a) Except as specifically provided for elsewhere in this article or Indiana statute, permits may be issued by the commissioner for any period of time not to exceed five (5) years as specified by IC 13-15-3.

(b) A permit application for the land application of biosolid, industrial waste product, or pollutant-bearing water submitted after the effective date of this article must comply with applicable sections of this article.

(c) For any person with a land application permit on the effective date of this article, a permit renewal application must be submitted within nine (9) months of the effective date of this article if the current permit:

(1) was issued before the effective date of this article; and

(2) has an expiration date that is less than or equal to two (2) years after the effective date of this article.

(d) For any person with a land application permit on the effective date of this article, a permit renewal application must be submitted within one (1) year of the effective date of this article if the current permit:

(1) was issued before the effective date of this article; and

(2) has an expiration date that is more than two (2) years and less than five (5) years

after the effective date of this article.

(e) If a person holding a valid permit under this article has made a timely and complete application for a renewal or new permit in accordance with this rule, the existing permit does not expire until a final determination on the application is made by the commissioner. The commissioner may seek injunctive relief with regard to the continuing activity of the permit applicant while the permit application is pending if the continuing activity of the permit applicant constitutes a threat to the environment or the public health, safety, or welfare.

[As added at: 21 IR 3786.]

327 IAC 6.1-3-5 ----- General requirements: transferability

(a) A permit issued under this article may be transferred to another person by a permittee if:

(1) the permittee notifies the commissioner of the proposed transfer at least forty-five (45) days prior to the date of the proposed transfer of the permit; and

(2) a written agreement is submitted to the commissioner containing:

(A) a specific date for transfer of permit responsi bilities; and

(B) coverage between the current and the new permittee, including acknowledgment:

(i) that the existing permittee is liable for violations up to that date; and

(ii) that the new permittee is liable for any permit violations after the date of transfer.

(b) The commissioner shall notify within thirty (30) days the current permittee and the proposed new permittee if the commissioner determines that:

(1) the permit is to be modified prior to transfer; or

(2) the current permit is to be terminated and a new permit application is to be filed by the proposed new permittee.

(c) Permits issued under 327 IAC 6, which was repealed in 1998, are not transferrable.

[As added at: 21 IR 3787.]

327 IAC 6.1-3-6 ----- General requirements: additional or more stringent requirements

(a) Nothing in this section precludes a political subdivision that has the appropriate authority from imposing requirements for the use or disposal of a biosolid, industrial waste product, or pollutant-bearing water more stringent than the requirements in this article or from imposing additional requirements for the use or disposal of a biosolid, industrial waste product, or pollutant-bearing water.

(b) This article and any permit issued under this article must not be less stringent than 40 CFR 503 requirements.

[As added at: 21 IR 3787.]

327 IAC 6.1-3-7 ----- General requirements: responsibility of person who prepares

(a) A person who prepares a biosolid, industrial waste product, or pollutant-bearing water is legally responsible under this article for the handling, transporting, storage, and land application. A person who prepares a biosolid, industrial waste product, or pollutant-bearing water is responsible for compliance with the land application permit issued under this article and all applicable provisions of this article.

(b) In the event a person who prepares a biosolid, industrial waste product, or pollutant-bearing water provides a biosolid, industrial waste product, or pollutant-bearing water to another person for final land application and that person alters the characteristics of the biosolid, industrial waste product, or pollutant-bearing water, the person who receives and alters the biosolid, industrial waste product, or pollutant-bearing water is considered the person who prepares the biosolid, industrial waste product, or pollutant-bearing water and

assumes primary responsibility for compliance with this article and IC 13-30.

(c) In the event a person who prepares a biosolid, industrial waste product, or pollutant-bearing water provides a biosolid, industrial waste product, or pollutant-bearing water to another person for final land application and that person alters the characteristics of the biosolid, industrial waste product, or pollutant-bearing water, the person who first prepares the biosolid, industrial waste product, or pollutant-bearing water shall submit a letter to the commissioner that states who received the biosolid, industrial waste product, or pollutant-bearing water.

(d) If the person who prepares a biosolid, industrial waste product, or pollutant-bearing water provides a biosolid, industrial waste product, or pollutant-bearing water to another person for final land application and that person does not alter the characteristics of the biosolid, industrial waste product, or pollutant-bearing water, then the person who applies the biosolid, industrial waste product, or pollutant-bearing water is also responsible for complying with this article and IC 13-30.

(e) When a person who prepares a biosolid or industrial waste product provides the biosolid or industrial waste product to another person who prepares the biosolid or industrial waste product or to a person who applies the biosolid or industrial waste product to the land, the person who provides the biosolid or industrial waste product shall provide the person who receives the biosolid or industrial waste product notice and applicable information to comply with this rule and IC 13-30.

[As added at: 21 IR 3787.]

RULE 4. LAND APPLICATION OF BIOSOLID AND INDUSTRIAL WASTE PRODUCT

327 IAC 6.1-4-1 ----- Land application of biosolid and industrial waste product: applicability

This rule applies to any person who prepares a biosolid or industrial waste product that:

(1) is land applied; and

(2) meets the criteria set forth in section 4 or 5 of this rule.

[As added at: 21 IR 3788.]

327 IAC 6.1-4-2 ----- Land application of biosolid and industrial waste product: characterization

(a) Prior to the issuance of a permit for land application under this article, the commissioner shall determine which biosolid or industrial waste product must be evaluated for characteristics of hazardous waste under 40 CFR 261, Subpart C, as incorporated by reference in 329 IAC 3.1.

(b) A biosolid or industrial waste product that is evaluated for hazardous waste characteristics under 40 CFR 261, Subpart C, as incorporated by reference in 329 IAC 3.1, and shows a pollutant concentration that exceeds the limits under 329 IAC 3.1 is prohibited from being land applied.

[As added at: 21 IR 3788.]

327 IAC 6.1-4-3 ----- Land application of biosolid and industrial waste product: general requirements

(a) Land application of biosolid or industrial waste product must be conducted under the supervision of:

(1) a certified wastewater treatment plant operator licensed under 327 IAC 8; or

(2) a person with at least one (1) year of experience in land application management practices and procedures as demonstrated through a signed affidavit.

Notice must be submitted to the commissioner of any change in the supervisor of the activity.

(b) Any person who prepares or applies a biosolid or industrial waste product shall ensure that the applicable requirements in this article and the permit are met when the biosolid or industrial waste product is prepared for application to the land or is applied to land.

(c) No person shall apply a biosolid or industrial waste product to any site if any of the cumulative pollutant loading rates in Table 2 in section 9(b) of this rule have been reached or exceeded.

(d) The person who prepares a biosolid or industrial waste product that is applied to any land application site shall:

(1) provide the person who applies the biosolid or industrial waste product written notification of the most recent nutrient concentrations as determined by testing under section 16(i) of this rule; and

(2) provide any person that farms the land with nutrient loadings as determined by information provided by the person who applies the biosolid or industrial waste product.

(e) The person who prepares a biosolid or industrial waste product to the land shall obtain information needed to comply with the following requirements:

(1) Based on all available records, if a biosolid or industrial waste product has not been applied to the land application site, the cumulative amount for each pollutant listed in Table 2 in section 9(b) of this rule may be applied to the land application site in accordance with Table 2 in section 9(b) of this rule.

(2) If a biosolid or industrial waste product has been applied to the land application site and the cumulative amount of each pollutant applied to the land application site in the biosolid or industrial waste product is known, the cumulative amount of each pollutant applied to the land application site shall be used to determine the additional amount of each pollutant that can be applied to the land application site in accordance with Table 2 in section 9(b) of this rule.

(3) If a biosolid or industrial waste product has been applied to the land application site and the cumulative amount of each pollutant applied to the land application site in the biosolid or industrial waste product is not documented, application of any additional biosolid or industrial waste product is prohibited.

(f) Before a biosolid or industrial waste product is applied to the land, the person who proposes to apply the biosolid or industrial waste product shall contact the commissioner to determine if a biosolid or industrial waste product has been applied to the land application site based on department records.

(g) The person who applies a biosolid or industrial waste product to the land shall provide the owner or lease holder of the land on which the biosolid or industrial waste product is applied notice and applicable information to comply with the management practices in section 7 of this rule.

(h) Any person who applies a biosolid or industrial waste product that was not generated in Indiana to land in Indiana must:

(1) be in compliance with IC 13-18-14-1; and

(2) obtain a permit under section 4 or 5 of this rule from the commissioner.

[As added at: 21 IR 3788.]

327 IAC 6.1-4-4 ----- Land application of biosolid and industrial waste product: site-specific permits

(a) For a biosolid to be eligible for a site-specific permit, the following criteria must be met:

(1) Either of the pathogen requirements:

(A) Class A in section 13(b) of this rule; or

(B) Class B in section 13(c) of this rule.

(2) Compliance with the vector attraction reduction requirements in section 15 of this rule.

(3) The pollutant limits in Table 1 in section 9(a) of this rule must not be exceeded.

(b) For an industrial waste product to be eligible for a site-specific permit, the pollutant limits in Table 1 in section 9(a) of this rule must not be reached or exceeded.

(c) A completed permit application must:

(1) be submitted to the commissioner on forms and in a format prescribed by the commissioner;

(2) include analytical data that demonstrates that pollutant concentrations do not exceed the limits in Table 1 in section 9(a) of this rule;

(3) for biosolids, provide the documentation of methods of pathogen treatment and vector attraction reduction as required by sections 13 and 15 of this rule; and

(4) any other information as may be required by the commissioner.

(d) A person who prepares a biosolid or a person applying for a permit shall comply with all applicable procedural requirements of the following:

(1) IC 13-15-4 pertaining to schedules for determinations on permits.

(2) IC 13-15-5 pertaining to comments on permit issuance or denial.

(3) IC 13-15-6 pertaining to an appeal of an agency determination.

(4) IC 13-15-8 pertaining to public notice.

(e) A person who prepares a biosolid that has a site-specific permit shall comply with:

(1) all permit conditions;

(2) unless specified otherwise, all requirements under this rule; and

(3) other applicable parts of this article.

(f) A person who prepares a biosolid that has a site-specific permit shall submit monthly reports in accordance with section 18 of this rule.

[As added at: 21 IR 3789.]

327 IAC 6.1-4-5 ----- Land application of biosolid and industrial waste product: nonsite-specific permits

(a) For a biosolid to be eligible for a nonsite-specific permit, the following criteria must be met:

(1) Either of the pathogen requirements:

(A) Class A in section 13(b) of this rule; or

(B) Class B in section 13(c) of this rule.

(2) Compliance with the vector attraction reduction requirements in section 15 of this rule.

(3) The pollutant concentrations in Table 1 in section 9(a) of this rule and in Table 3 in section 9(c) of this rule must not be exceeded.

(b) For an industrial waste product to be eligible for a nonsite-specific permit, the pollutant concentrations in Table 1 in section 9(a) of this rule and Table 3 in section 9(c) of this rule must not be reached or exceeded.

(c) A completed permit application must:

(1) be submitted to the commissioner on forms and in a format prescribed by the commissioner;

(2) include analytical data that demonstrates that pollutant concentrations do not exceed the limits in Table 1 in section 9(a) of this rule and Table 3 in section 9(c) of this rule;

(3) include the names of all counties in which the biosolid or industrial waste product will be applied;

(4) for biosolid, provide the documentation of methods of pathogen treatment and vector attraction reduction as required by sections 13 and 15 of this rule; and

(5) any other information as may be required by the commissioner to protect the envi-

ronment or public health.

(d) A person who prepares a biosolid or industrial waste product and that has a nonsite-specific permit shall:

(1) comply with all permit conditions;

(2) unless otherwise specified, comply with this rule;

(3) only apply to agricultural land;

(4) not apply a biosolid or industrial waste product within six hundred sixty (660) feet of any residence unless a signed waiver has been received from the owner and, if applicable, tenant of the residence; and

(5) not apply a biosolid or industrial waste product within six hundred sixty (660) feet of any public building or public or nonpublic school building.

(e) Waivers must be obtained from the residence owner and, if applicable, tenant of the residence:

(1) for each year in which biosolid or industrial waste product is proposed to be applied at distances less than the setback distance in subsection (d)(4); and

(2) prior to the application of the biosolid or industrial waste product at distances less than the setback distance in subsection (d)(4).

(f) A person who prepares a biosolid or industrial waste product and that has a nonsite-specific permit shall submit monthly reports in accordance with section 18 of this rule.

[As added at: 21 IR 3789.]

327 IAC 6.1-4-6 ----- Land application of biosolid and industrial waste product: site restrictions

(a) Application of a biosolid or industrial waste product must not be conducted:

(1) within thirty-three (33) feet of any waters of the state;

(2) except by subsurface injection or incorporation by the end of the day, within three hundred (300) feet of any waters of the state;

(3) except by subsurface injection, within three hundred (300) feet of any residence;

(4) within fifty (50) feet of any well;

(5) within two hundred (200) feet of a potable water well or drinking water spring;

(6) within fifty (50) feet of the property line of any public building or public or nonpublic school.

(b) Waivers must be obtained from the residence owner and, if applicable, tenant of the residence:

(1) for each year in which biosolid or industrial waste product is proposed to be applied at distances less than the setback distance in subsection (a)(3); and

(2) prior to the application of the biosolid or industrial waste product at distances less than the setback distance in subsection (a)(3).

(c) Using soil survey data established by USDA Natural Resource Conservation Service, application of a biosolid or industrial waste product is prohibited if:

(1) the seasonal high water table is within eighteen (18) inches of the soil surface; and

(2) the seasonal high water table is:

(A) within thirty-six (36) inches of the soil surface; and

(B) any soil layer between eighteen (18) inches and thirty-six (36) inches below the surface has a permeability of greater than two (2) inches per hour.

(d) Requirements for application of a biosolid or industrial waste product onto a slope are as follows:

(1) Application of a biosolid or industrial waste product on slopes greater than eighteen percent (18%) is prohibited.

(2) Dewatered biosolid or industrial waste product may be applied by surface applica-

tion on slopes that are no greater than twelve percent (12%).

(3) Dewatered biosolid or industrial waste product incorporated into the soil on the day of application may be applied to slopes that are no greater than eighteen percent (18%).

(4) Liquid biosolid or industrial waste product may be applied by surface application on slopes that are no greater than six percent (6%).

(5) Liquid biosolid or industrial waste product may be injected into the soil on slopes that are no greater than eighteen percent (18%).

(e) Biosolid or industrial waste product must not be applied to land unless there is a minimum depth of twenty (20) inches of soil overlying bedrock.

(f) Except for a biosolid containing an industrial waste product with a cadmium level of two (2) milligrams per kilogram or greater, the soil pH must be 5.5 or greater at the time a biosolid is applied unless the commissioner determines that the soil pH must be higher to protect the environment or public health.

(g) The soil pH must be 6.5 or greater at the time an industrial waste product or a biosolid containing an industrial waste product with a cadmium level of two (2) milligrams per kilogram or greater is applied unless the commissioner determines that the soil pH must be higher to protect the environment or public health.

(h) The soil pH value shall be obtained by sampling the soil to the depth of cultivation or a biosolid or industrial waste product placement, whichever is greater, and analyzing by the electrometric method*.

*The electrometric method may be found in "Methods of Soil Analysis, Agronomy Monograph No. 9.", C.A. Black, ed., American Society of Agronomy, Madison, Wisconsin, pp. 199-209, 1982, available from the American Society of Agronomy, Soil Science of America, Inc., 677 South Segoe Road, Madison, Wisconsin 53711. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3790.]

327 IAC 6.1-4-7 ----- Land application of biosolid and industrial waste product: management practices

(a) Food crops shall not be harvested for fourteen (14) months after application of a biosolid if the harvested part:

(1) touches the ground where biosolid has been applied; and

(2) has no harvested parts below the soil surface.

(b) Food crops shall not be harvested for twenty (20) months after application of a biosolid if:

(1) the biosolid remains on the land surface for four (4) months or longer prior to incorporation into the soil; and

(2) harvested parts are below the soil surface.

(c) Food crops shall not be harvested for thirty-eight (38) months after application of biosolid if:

(1) the biosolid remains on the land surface for less than four (4) months prior to incorporation into the soil; and

(2) harvested parts are below the soil surface.

(d) Unless subsection (a), (b), or (c) applies, food crops, feed crops, and fiber crops shall not be harvested for thirty (30) days after application of biosolid.

(e) Grazing of animals on land that has received biosolid is prohibited for thirty (30) days after application of the biosolid.

(f) Turf grown on land where biosolid is applied shall not be harvested for one (1) year after application of the biosolid if the harvested turf is placed on either land with a high

potential for public exposure or a lawn unless otherwise approved by the commissioner.

(g) Except for a Class A biosolid under section 13(b) of this rule, public access to land with a high potential for public exposure shall be restricted for one (1) year after application of biosolid to that land.

(h) Except for a Class A biosolid under section 13(b) of this rule, public access to land with a low potential for public exposure shall be restricted for thirty (30) days after application of biosolid.

(i) A biosolid or industrial waste product shall not be applied to the land:

(1) if the biosolid or industrial waste product is likely to adversely affect a threatened or endangered species or its designated critical habitat; or

(2) in violation of endangered species regulations at IC 14-22-34.

(j) A biosolid or industrial waste product shall not be applied to the land in violation of historic preservation requirements under IC 14-20-1 or 310 IAC 15-3.

(k) Application of biosolid or industrial waste product is prohibited if the moisture holding capacity of the soil is exceeded as a result of previous land application practices, precipitation occurrences, or flooding.

(l) A biosolid or industrial waste product may only be applied to land that is frozen or snow-covered if:

(1) the biosolid or industrial waste product does not enter a wetland or other waters of the state; and

(2) a management plan has been submitted and approved by the commissioner including the following:

(A) setbacks;

(B) application rates;

(C) site characteristics;

(D) supervision and operational oversight; and

(E) other applicable information.

(m) A biosolid or industrial waste product may only be applied in a flood plain if:

(1) the biosolid or industrial waste product is injected or incorporated into the soil by the end of the day of placement in the flood plain; and

(2) the biosolid or industrial waste product does not enter a wetland or other waters of the state.

[As added at: 21 IR 3790.]

327 IAC 6.1-4-8 ----- Land application of biosolid and industrial waste product: storage, stockpiling, and staging of biosolid or industrial waste product

(a) A minimum of ninety (90) days effective storage capacity is required for a biosolid or industrial waste product unless an equivalent method of meeting the requirement is approved by the commissioner.

(b) Except for earthen lagoons under 327 IAC 6.1-8, any storage structures, such as pits or tanks, which are subject to volume fluctuations due to precipitation events, must have a minimum of one (1) foot of freeboard at all times.

(c) A construction permit must be obtained from the commissioner under 327 IAC 3 prior to construction of storage structures located at the treatment works that generates the biosolid or industrial waste product.

(d) Off-site storage structures for the storage of biosolid or industrial waste product must be in accordance with 327 IAC 6.1-8.

(e) A biosolid or industrial waste product for land application may be stored for no more than two (2) years.

(f) Stockpiling of a biosolid or industrial waste product at a land application site must be

handled in accordance with an approved management plan, including the following:

(1) Setbacks.

(2) Site characteristics.

(3) Handling practices.

(4) Other applicable information.

(g) Staging of a biosolid or industrial waste product for less than twenty-four (24) hours must be handled in accordance with the following:

(1) The biosolid or industrial waste product must be dewatered.

(2) The permittee shall conduct the land application operation in such a manner that staging of dewatered biosolid or industrial waste product is minimized.

(3) The amount of biosolid or industrial waste product staged must not exceed the maximum amount that can be applied to that land application site within twenty-four (24) hours of placement at the land application site in accordance with this rule or the permit.

(4) Staging of dewatered biosolid or industrial waste product is prohibited:

(A) within three hundred (300) feet of any waters of the state or surface inlet to a subsurface drainage system;

(B) within six hundred sixty (660) feet of any residence unless a signed waiver has been received from the owner and, if applicable, tenant of the residence;

(C) within two hundred (200) feet of any potable water supply well or drinking water spring;

(D) on any area with a slope greater than two percent (2%);

(E) on any area located in the flood plain unless applied by the end of same day it is staged; and

(F) on any area with a seasonal high water table within three (3) feet of the surface.

(h) Waivers must be obtained from the residence owner and, if applicable, tenant of the residence for each year in which biosolid or industrial waste product is proposed to be staged at distances less than the setback distance in subsection (g)(4)(B).

(i) In addition to the requirements in subsection (g), the following requirements apply to staging of a biosolid or industrial waste product for more than twenty-four (24) hours due to unforeseen circumstances, such as an extreme weather event or equipment failure:

(1) Except under subdivision (2), the biosolid or industrial waste product must be completely covered by a tarp or plastic sheet.

(2) If not covered in accordance with subdivision (1), the biosolid or industrial waste product must be applied to the land application site or returned to an approved storage site within forty-eight (48) hours of placement at the staging location.

(3) The person who prepares a biosolid or industrial waste product shall submit written notification within one (1) week to the commissioner that includes the following information:

(A) The date the biosolid or industrial waste product was placed at the land application site.

(B) The reason the biosolid or industrial waste product could not be applied within twenty-four (24) hours of staging.

(C) The date the biosolid or industrial waste product was applied to the land application site or returned to an approved storage site.

[As added at: 21 IR 3791.]

327 IAC 6.1-4-9 ----- Land application of biosolid and industrial waste product: pollutant limits

(a) Table 1 in this subsection lists ceiling concentrations of metal pollutants for a biosolid or industrial waste product that is land applied. A biosolid or industrial waste product must

not be applied to land if the concentration of pollutants in the biosolid or industrial waste product, as determined by EPA-600/4-79-020*, reaches or exceeds any of the ceiling concentration limits established in the following:

Table 1

Ceiling Concentrations

Pollutant	Ceiling Concentration (milligrams per kilogram)[1]
Arsenic	75
Cadmium	85
Copper	4,300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7,500

[1]Dry weight basis

(b) Table 2 in this subsection lists the cumulative pollutant loading rates* for sites on which a biosolid or industrial waste product is applied:

Table 2

Cumulative Pollutant Loading Rates*

Pollutant	Cumulative Pollutant Loading Rates (pounds per acre)
Arsenic	37
Cadmium	35[1]
Copper	1,339
Lead	268
Mercury	15
Nickel	375
Selenium	89
Zinc	2,499

[1]For biosolid only. The cumulative pollutant loading rate for cadmium in industrial waste product or biosolid that includes an industrial waste product is four and one-half (4.5) pounds per acre for soil cation exchange capacity of less than 5; nine (9) pounds per acre if the soil cation exchange capacity is between 5 and 15; and eighteen (18) pounds per acre if the soil cation exchange capacity is greater than 15.

(c) Table 3 in this subsection lists the pollutant concentrations for biosolid or industrial waste product, as determined by EPA-600/4-79-020*, to be applied to the land in accordance with a nonsite-specific permit under section 5 of this rule or a marketing and distribution program permit under 327 IAC 6.1-5:

Table 3
Pollutant Concentrations

Pollutant	Pollutant Concentrations (milligrams per kilogram)[1]
Arsenic	41
Cadmium	39
Copper	1,500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2,800

[1]Dry weight basis

(d) Table 4 in this subsection lists the maximum annual pollutant loading rates* for sites where biosolid or industrial waste product is land applied:

Table 4
Maximum Annual Pollutant Loading Rates*

Pollutant	Annual Pollutant Loading Rate (pounds per acre per 365 day period)
Arsenic	1.8
Cadmium	0.45
Copper	66.0
Lead	13.4
Mercury	0.7
Nickel	18.7
Selenium	4.4
Zinc	124.9

(e) A permitted biosolid or industrial waste product that exceeds any pollutant ceiling concentrations in Table 1 in subsection (a) must not be applied to the land unless the commissioner approves the results of the following analyses prior to initial application:

(1) The person who prepares a biosolid or industrial waste product shall take at least four (4) representative samples of the biosolid or industrial waste product to be applied to analyze for any metal concentration in Table 1 in subsection (a) that has been exceeded.

(2) For a biosolid or industrial waste product that is receiving additional biosolid or industrial waste product, the four (4) samples must be taken:

(A) within a thirty (30) day period; and

(B) at least two (2) days apart.

(3) For a fixed volume of a biosolid or industrial waste product that is not receiving additional biosolid or industrial waste product, the four (4) samples must be taken within a thirty (30) day period.

(4) The analysis for each pollutant in all four (4) samples must be less than the comparable pollutant ceiling concentration in Table 1 in subsection (a).

(f) Under a nonsite-specific permit, the person who prepares a biosolid or industrial waste product that exceeds any concentration of a metal listed in Table 3 in subsection (c) shall do either of the following:

(1) Within ninety (90) days of first receiving knowledge of the exceeded limit, the person who prepares a biosolid or industrial waste product shall apply for a site-

specific permit for land application of the biosolid or industrial waste product. The biosolid or industrial waste product must be applied under a site-specific permit.

(2) Provide the following analysis within forty-five (45) days of first receiving knowledge of the exceeded limit for approval by the commissioner:

(A) The person who prepares a biosolid or industrial waste product shall take at least four (4) representative samples of the biosolid or industrial waste product to be applied to analyze for any metal concentration in Table 1 in subsection (a) that has been exceeded.

(B) For biosolid or industrial waste product that is receiving additional biosolid or industrial waste product, the four (4) samples must be taken:

(i) within a thirty (30) day period; and

(ii) at least two (2) days apart.

(C) For a fixed volume of biosolid or industrial waste product that is not receiving additional biosolid or industrial waste product, the four (4) samples must be taken within a thirty (30) day period.

(D) The analysis of the average of the four (4) samples for each pollutant must be less than the comparable pollutant concentrations in Table 3 in subsection (c).

(E) If any of the analyses of the average of the four (4) samples for each pollutant exceeds the comparable pollutant concentrations in Table 3 in subsection (c), the person who prepares a biosolid or industrial waste product shall apply for a site-specific permit within sixty (60) days of receiving the results of the analysis in this subdivision.

(g) A person who prepares a biosolid or industrial waste product and that intends to reapply for a nonsite-specific permit shall complete the following for approval by the commissioner:

(1) The person who prepares a biosolid or industrial waste product shall take at least eight (8) representative samples of the biosolid or industrial waste product to be applied to analyze for any metal concentration in Table 3 in subsection (c) that has been exceeded.

(2) The samples must be taken:

(A) within a twelve (12) month period; and

(B) at least thirty (30) days apart.

(3) All pollutant concentrations in all eight (8) samples must have pollutant concentrations less than the comparable pollutant concentrations in Table 3 in subsection (c).

*Methods referenced in this section may be obtained as follows:

(1) EPA-600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983, available from Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, Ohio 45202.

(2) For the purpose of determining annual pollutant loading rates and cumulative pollutant loading rates, methods for measuring inorganic pollutants may be found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, [Third Edition, November 1986, as amended by Updates 1 (July 1992), 2 (September 1994), 2A (August 1993), and 2B (January 1995)], available from U.S. EPA.

These methods are also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3792.]

327 IAC 6.1-4-10 --- Land application of biosolid and industrial waste product: loading rate limits

(a) Maximum crop and annual loading rates are determined for a biosolid or industrial waste products to be applied on the basis of the following parameters:

(1) Crop application rates, based on plant available nitrogen (PAN) loadings using the appropriate formulas in subsection (b), shall not exceed either of the following:

(A) PAN loading rates for crop production in Table 5 as follows:

Table 5

Plant Available Nitrogen Loading for Crop Production

Crop	Pounds of PAN Per Acre[1]
Corn	200
Soybeans	100
Hay	100
Cereal grain	100
Set aside/idle	50

[1]An equivalent method of meeting the nutrient management requirement may be submitted to the commissioner for approval for alternative nutrient loading rates that provide equivalent or greater protection to the environment and public health.

(B) The nitrogen removal rate for the proposed crop to be grown on the land application site adjusted to account for application of fertilizers, manure, and the presence of residual available nitrogen in the soil from previous applications of a biosolid, industrial waste product, or pollutant-bearing water.

(2) Annual loading rates of a biosolid or industrial waste product must not result in any of the annual pollutant loading rates in Table 4 in section 9(d) of this rule being exceeded. The following formula for annual loading rate calculation applies to this article and must be used to calculate the amount of biosolid or industrial waste product to be applied per acre per three hundred sixty-five (365) day period:

$$ALR = \frac{APLR}{C \times 0.002}$$

Where ALR = Annual loading rate in dry tons per acre per three hundred sixty-five (365) day period.

APLR = Annual pollutant loading rate in pounds per acre per three hundred sixty-five (365) day period.

C = Pollutant concentration in milligrams per kilogram (mg/kg) of total solids as determined by Part 2540 G*.

(3) Phosphorus loading requirements may be included as a permit condition if the commissioner determines it is necessary for protection of public health or the environment.

(b) The following formulas for PAN loading calculations apply to this article and must be used to calculate the amount of PAN in the biosolid or industrial waste product and the residual available nitrogen at the application site; all calculations are based on a percent dry weight basis:

(1) %Total N = %Total Kjeldahl N + %Nitrate N

(2) %Organic N = %Total N - (%Ammonium N + %Nitrate N)

(3) Pounds Organic N per dry ton of industrial waste product or biosolid, except anaerobically digested biosolid, available during year of application = %Organic N x 6

(4) Pounds Organic N per dry ton of anaerobically digested biosolid available during year of application = %Organic N x 4

(5) Pounds of Ammonium N per dry ton = %Ammonium N x 20

(6) Pounds of Nitrate N per dry ton = %Nitrate N x 20

(7) Pounds PAN per dry ton = Pounds of Organic N per dry ton + Pounds of Ammonium N per dry ton + Pounds of Nitrate N per dry ton

(8) Residual nitrogen from past biosolid or industrial waste product applications:

(A) Pounds of residual N from industrial waste product or biosolid, except anaerobically digested biosolid, available one (1) year after application = %Organic N x 3 x dry tons applied per acre

(B) Pounds of residual N from anaerobically digested biosolid available one (1) year after application = %Organic N x 2 x dry tons applied per acre

(C) Pounds of residual N from industrial waste product or biosolid, except anaerobically digested biosolid, available two (2) years after application = %Organic N x 1.6 x dry tons applied per acre

(D) Pounds of residual N from anaerobically digested biosolid available two (2) years after application = %Organic N x dry tons applied per acre

(E) Pounds of residual N from industrial waste product or biosolid, except anaerobically digested biosolid, available three (3) years after application = %Organic N x 0.8 x dry tons applied per acre

(F) Pounds of residual N from anaerobically digested biosolid available three (3) years after application = %Organic N x 0.5 x dry tons applied per acre

Where N = Nitrogen.

*Part 2540 G may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3794.]

327 IAC 6.1-4-11 ---- Land application of biosolid and industrial waste product: land application of paper waste

(a) Any person who is applying for a permit to land apply paper waste shall analyze the paper waste using EPA Method 1613 B* to determine the total toxic equivalency factor (TEF) for tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and tetrachlorodibenzo-p-furan (2,3,7,8-TCDF) where:

Total TEF = 2,3,7,8-TCDD + 0.1(2,3,7,8-TCDF)

(b) Rather than conduct a new analysis under subsection (a), a person who prepares a biosolid or industrial waste product and that applies for a permit renewal to land apply paper waste may submit results of an analysis for 2,3,7,8-TCDD and 2,3,7,8-TCDF by EPA Method 1613 B* that is up to one (1) year old if the applicant also provides a signed statement that:

(1) the analysis is representative of the material currently being produced; and

(2) no significant process changes have been made.

(c) Land application of any paper waste with a total toxic equivalency factor for 2,3,7,8-TCDD and 2,3,7,8-TCDF that is greater than or equal to seventy-five (75) parts per trillion is prohibited.

(d) Land application of any paper waste with a total toxic equivalency factor for 2,3,7,8-TCDD and 2,3,7,8-TCDF that is less than seventy-five (75) parts per trillion must be in accordance with applicable permit conditions.

(e) For purposes of this section, paper waste means a material generated in the production or recycling of paper or paper-like products.

*Method 1613 B may be found in EPA 821-B-94-005, October 1994, available from the Water Resource Center, Mail Code RC 4100, 401 M Street, S.W., Washington, D.C. 20460, (202) 260-7786. This method is also available for copying at the Indiana Department of

Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3795.]

327 IAC 6.1-4-12 --- Land application of biosolid and industrial waste product: polychlorinated biphenyls (PCBs)

Land application of a biosolid or industrial waste product containing concentrations of polychlorinated biphenyls at two (2) milligrams per kilogram or greater on a dry weight basis is prohibited.

[As added at: 21 IR 3795.]

327 IAC 6.1-4-13 --- Land application of biosolid and industrial waste product: pathogen requirements

(a) This section contains the requirements for a biosolid to be classified either Class A or Class B with respect to pathogens.

(b) To be categorized as Class A, a biosolid must meet or exceed the following requirements:

(1) The pathogen requirements in subdivision (2) must be met either prior to, or at the same time as, the vector attraction reduction requirements in section 15(b)(1) through 15(b)(5), 15(b)(9), and 15(b)(10) of this rule.

(2) The requirements in one (1) of the following alternatives:

(A) For Class A, Alternative 1, except for composting, the following:

(i) Either the density of fecal coliform in the biosolid, as determined by Part 9221 E* or Part 9222 D*, must be less than one thousand (1,000) most probable number (MPN) per gram of total solids or the density of Salmonella sp. bacteria in the biosolid, as determined using Part 9260 D*, must be less than three (3) MPN per four (4) grams of total solids.

(ii) The temperature of the biosolid that is used or disposed must be maintained at a specific value for a period of time as applicable in the following:

(AA) When the percent total solids of the biosolid is seven percent (7%) or higher, the temperature of the biosolid must be fifty degrees Celsius (50%C) or higher; the time period must be twenty (20) minutes or longer; and the temperature and time period must be determined using Equation 1 as follows, except when small particles of biosolid are heated by either warmed gases or an immiscible liquid:

Equation 1:

$$D = \frac{131{,}700{,}000}{10^{0.14000t}}$$

Where D = Time in days.

t = Temperature in degrees Celsius.

(BB) When the percent total solids of the biosolid is seven percent (7%) or higher and small particles of biosolid are heated by either warmed gases or an immiscible liquid, the temperature of the biosolid must be fifty degrees Celsius (50%C) or higher; the time period must be fifteen (15) seconds or longer; and the temperature and time period must be determined using Equation 1 in subitem (AA).

(CC) When the percent total solids of the biosolid is less than seven percent (7%) and the time period is at least fifteen (15) seconds, but less than thirty (30) minutes, the temperature and time period must be determined using Equation 1 in subitem (AA).

(DD) When the percent total solids of the biosolid is less than seven per-

cent (7%), the temperature of the biosolid is fifty degrees Celsius (50%C) or higher; and the time period is thirty (30) minutes or longer, the temperature and time period must be determined using Equation 2 as follows:

Equation 2:

$$D = \frac{50,070,000}{10^{0.1400t}}$$

Where D = Time in days.

t = Temperature in degrees Celsius.

(B) For Class A, Alternative 2, the following:

(i) Either the density of fecal coliform in the biosolid, as determined by Part 9221 E* or Part 9222 D*, must be less than one thousand (1,000) MPN per gram of total solids or the density of Salmonella sp. bacteria in the biosolid, as determined using Part 9260 D*, must be less than three (3) MPN per four (4) grams of total solids.

(ii) The pH of the biosolid must be raised to above 12 and shall remain above 12 for seventy-two (72) hours.

(iii) The temperature of the biosolid must be above fifty-two degrees Celsius (52%C) for twelve (12) hours or longer during the period that the pH of the biosolid is above 12.

(iv) At the end of the seventy-two (72) hour period during which the pH of the biosolid is above 12, the biosolid must be air dried to achieve a percent total solids in the biosolid greater than fifty percent (50%).

(C) For Class A, Alternative 3, the following:

(i) Either the density of fecal coliform in the biosolid, as determined by Part 9221 E* or Part 9222 D*, must be less than one thousand (1,000) MPN per gram of total solids or the density of Salmonella sp. bacteria in the biosolid, as determined using Part 9260 D*, must be less than three (3) MPN per four (4) grams of total solids.

(ii) Regarding enteric viruses, the following:

(AA) The biosolid must be analyzed prior to pathogen treatment to determine whether the biosolid contains enteric viruses using ASTM Designation: D 4994-89*.

(BB) When the density of enteric viruses in the biosolid prior to pathogen treatment is less than one (1) plaque-forming unit (PFU) per four (4) grams of total solids the biosolid is Class A with respect to enteric viruses until the next monitoring required by section 16 of this rule for the biosolid.

(CC) When the density of enteric viruses in the biosolid prior to pathogen treatment is equal to or greater than one (1) PFU per four (4) grams of total solids the biosolid is Class A with respect to enteric viruses when the density of enteric viruses in the biosolid after pathogen treatment is less than one (1) PFU per four (4) grams of total solids and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the biosolid that meets the enteric virus density requirement are documented.

(DD) After the enteric virus reduction in subitem (CC) is demonstrated for the pathogen treatment process, the biosolid continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in subitem (CC).

(iii) Regarding viable helminth ova, the following:

(AA) Prior to pathogen treatment the biosolid must be analyzed to determine whether the biosolid contains viable helminth ova using methods in EPA 600/1-87-014*.

(BB) When the density of viable helminth ova in the biosolid prior to pathogen treatment is less than one (1) per four (4) grams of total solids the biosolid is Class A with respect to viable helminth ova until the next monitoring required by section 16 of this rule for the biosolid.

(CC) When the density of viable helminth ova in the biosolid prior to pathogen treatment is equal to or greater than one (1) per four (4) grams of total solids the biosolid is Class A with respect to viable helminth ova when the density of viable helminth ova in the biosolid after pathogen treatment is less than one (1) per four (4) grams of total solids and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the biosolid that meets the viable helminth ova density requirement are documented.

(DD) After the viable helminth ova reduction in subitem (CC) is demonstrated for the pathogen treatment process, the biosolid continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in subitem (CC).

(D) For Class A, Alternative 4, the following:

(i) Either the density of fecal coliform in the biosolid, as determined by Part 9221 E* or Part 9222 D*, must be less than one thousand (1,000) MPN per gram of total solids or the density of Salmonella sp. bacteria in the biosolid, as determined using Part 9260 D*, must be less than three (3) MPN per four (4) grams of total solids.

(ii) The density of enteric viruses in the biosolid must be less than one (1) PFU per four (4) grams of total solids.

(iii) The density of viable helminth ova in the biosolid must be less than one (1) per four (4) grams of total solids.

(E) For Class A, Alternative 5, the following:

(i) Either the density of fecal coliform in the biosolid, as determined by Part 9221 E* or Part 9222 D*, must be less than one thousand (1,000) MPN per gram of total solids or the density of Salmonella, sp. bacteria in the biosolid, as determined using Part 9260 D*, must be less than three (3) MPN per four (4) grams of total solids.

(ii) Biosolid must be treated in one (1) of the processes to further reduce pathogens described in section 14(b) of this rule.

(F) For Class A, Alternative 6, the following:

(i) Either the density of fecal coliform in the biosolid, as determined by Part 9221 E* or Part 9222 D*, must be less than one thousand (1,000) MPN per gram of total solids or the density of Salmonella, sp. bacteria in the biosolid, as determined using Part 9260 D*, must be less than three (3) MPN per four (4) grams of total solids.

(ii) A biosolid must be treated in a process that is equivalent to a process to further reduce pathogens as determined by the commissioner on the recommendation of EPA.

(c) To be categorized as Class B, a biosolid must meet one (1) of the following alternatives:

(1) For Class B, Alternative 1, the following:

(A) Seven (7) representative samples of the biosolid must be collected prior to land application.

(B) The geometric mean of the density of fecal coliform in the samples collected in item (i) *[subdivision (A)]* must be less than either two million (2,000,000) MPN per gram of total solids or two million (2,000,000) colony-forming units (CFU) per gram of total solids.

(2) For Class B, Alternative 2, the biosolid must be treated by one (1) of the processes to significantly reduce pathogens described in section 14(a) of this rule.

(3) For Class B, Alternative 3, the biosolid that is used or disposed must be treated in a process that is equivalent to a process to significantly reduce pathogens, as determined by the commissioner on the recommendation of EPA.

(d) For purposes of subsection (b)(2)(B), the pH of biosolid must be measured at twenty-five degrees Celsius (25%C) or measured at another temperature and then converted to an equivalent value at twenty-five degrees Celsius (25%C).

*Methods referenced in this section may be obtained as follows:

(1) Part 9221 E and Part 9222 D may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005.

(2) Part 9260 D may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from the American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005; or Kenner, B.A. and H.P. Clark, "Detection and Enumeration of Salmonella and Pseudomonas Aeruginosa", Journal of the Water Pollution Control Federation, Vol. 46, no. 9, September 1974, pp. 2163-2171, available from Water Environment Federation, 601 Wythe Street, Alexandria, Virginia 22314.

(3) ASTM Designation: D 4994-89 may be found in "Standard Practice for Recovery of Viruses From Wastewater Sludges", 1996 Annual Book of ASTM Standards: Section 11.02, Water, Part 2, available from ASTM, 1916 Race Street, Philadelphia, Pennsylvania 19103-1187.

(4) EPA 600/1-87/014, Yanko, W.A., "Occurrence of Pathogens in Distribution and Marketing Municipal Sludges", January 1988, is available from National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (PB 88-154273/AS).

These methods are also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3795.]

327 IAC 6.1-4-14 --- Land application of biosolid and industrial waste product: pathogen treatment processes

(a) For purposes of section 13(c)(2) of this rule, the processes to significantly reduce pathogens (PSRP) include the following:

(1) Aerobic digestion, including the following:

(A) A biosolid must be agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature.

(B) Values for the mean cell residence time and temperature must be between:

(i) forty (40) days at twenty degrees Celsius (20%C); and

(ii) sixty (60) days at fifteen degrees Celsius (15%C).

(2) Air drying, including the following:

(A) A biosolid must be dried on:

(i) sand beds; or

(ii) paved basins.

(B) The biosolid must dry for a minimum of ninety (90) days.

(C) For at least sixty (60) consecutive days, the ambient average daily temperature must be above zero degrees Celsius (0%C).

(3) Anaerobic digestion, including the following:

(A) Biosolid must be treated in the absence of oxygen for a specific mean cell residence time at a specific temperature.

(B) Values for the mean cell residence time and temperature must be between:

(i) fifteen (15) days at thirty-five degrees Celsius (35%C) to fifty-five degrees Celsius (55%C); and

(ii) sixty (60) days at twenty degrees Celsius (20%C).

(4) Composting, including the following:

(A) Using either the within-vessel, static aerated pile, or windrow composting methods*, the temperature of the biosolid must:

(i) be raised to forty degrees Celsius (40%C) or higher; and

(ii) remain at forty degrees Celsius (40%C) or higher for five (5) days.

(B) For four (4) hours during the five (5) days, the temperature in the compost pile must exceed fifty-five degrees Celsius (55%C).

(5) Lime stabilization in which sufficient lime is added to the biosolid to raise the pH of the biosolid to 12 after two (2) hours of contact.

(b) For purposes of section 13(b)(2)(E)(ii) of this rule, the processes to further reduce pathogens (PFRP) include the following:

(1) Composting, including the following:

(A) Using either the within-vessel composting method* or the static aerated pile composting method*, the temperature of the biosolid must be maintained at fifty-five degrees Celsius (55%C) or higher for three (3) days.

(B) Using the windrow composting method*:

(i) the temperature of the biosolid must be maintained at fifty-five degrees Celsius (55%C) or higher for fif teen (15) days or longer; and

(ii) during the period when the compost is maintained at fifty-five degrees Celsius (55%C) or higher, there must be a minimum of five (5) turnings of the windrow.

(2) Heat drying, including the following:

(A) A biosolid must be dried by direct or indirect contact with hot gases to increase the percent total solids of the biosolid to ninety percent (90%) or greater.

(B) Either:

(i) the temperature of the biosolid particles must exceed eighty degrees Celsius (80%C); or

(ii) the wet bulb temperature of the gas in contact with the biosolid as the biosolid leaves the dryer must exceed eighty degrees Celsius (80%C).

(3) Liquid biosolid must be heated to a temperature of one hundred eighty degrees Celsius (180%C) or higher for thirty (30) minutes.

(4) Thermophilic aerobic digestion, including the following:

(A) Liquid biosolid must be agitated with air or oxygen to maintain aerobic conditions.

(B) The mean cell residence time of the biosolid must be for ten (10) days at fifty-five degrees Celsius (55%C) to sixty degrees Celsius (60%C).

(5) Biosolid must be irradiated with beta rays from an accelerator at dosages of at least one (1.0) megarad at room temperature, which is approximately twenty degrees Celsius (20%C).

(6) Biosolid must be irradiated with gamma rays from certain isotopes, such as Cobalt

60 and Cesium 137, at dosages of at least one (1.0) megarad at room temperature, which is approximately twenty degrees Celsius (20%C).

(7) For pasteurization, the temperature of the biosolid must be maintained at seventy degrees Celsius (70%C) or higher for thirty (30) minutes or longer.

(c) For purposes of subsection (a)(5), the pH of biosolid must be measured at twenty-five degrees Celsius (25%C) or measured at another temperature and then converted to an equivalent value at twenty-five degrees Celsius (25%C).

*Methods for within-vessel, static aerated pile, or windrow composting methods may be found in "Environmental Regulations and Technology_Control of Pathogens and Vectors in Sewage Sludge", EPA-625/R-92/013, available from U.S. Environmental Protection Agency, Cincinnati, Ohio, 1992. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3798.]

327 IAC 6.1-4-15 --- Land application of biosolid and industrial waste product: vector attraction reduction requirements

(a) One (1) of the vector attraction reduction requirements in subsection (b) or an equivalent vector attraction reduction method as approved by the commissioner on the recommendation of the U.S. EPA must be met when biosolid is applied to any land application site.

(b) The following is a list of alternative vector attraction reduction requirements for a biosolid applied to the land:

(1) The mass of volatile solids in the biosolid is reduced by a minimum of thirty-eight percent (38%) as determined using EPA-625/R-92/013*.

(2) When the thirty-eight percent (38%) volatile solids reduction requirement in subdivision (1) cannot be met for an anaerobically digested biosolid, vector attraction reduction is demonstrated by digesting a portion of the previously digested biosolid anaerobically in the laboratory in a bench-scale unit for forty (40) additional days at a temperature between thirty degrees Celsius (30%C) and thirty-seven degrees Celsius (37%C). When, at the end of the forty (40) days, the volatile solids in the biosolid at the beginning of that period is reduced by less than seventeen percent (17%), vector attraction reduction is achieved.

(3) When the thirty-eight percent (38%) volatile solids reduction requirement in subdivision (1) cannot be met for an aerobically digested biosolid, vector attraction reduction is demonstrated by digesting a portion of the previously digested biosolid that has a percent total solids of two percent (2%) or less aerobically in the laboratory in a bench-scale unit for thirty (30) additional days at twenty degrees Celsius (20%C). When, at the end of the thirty (30) days, the volatile solids in the biosolid at the beginning of that period is reduced by less than fifteen percent (15%), vector attraction reduction is achieved.

(4) The specific oxygen uptake rate (SOUR) as determined using Part 2710 B* for a biosolid treated in an aerobic process is equal to or less than one and one-half (1.5) milligrams of oxygen per hour per gram of total solids at a temperature of twenty degrees Celsius (20%C).

(5) A biosolid is treated in an aerobic process for fourteen (14) days or longer. During that time, the temperature of the biosolid must be higher than forty degrees Celsius (40%C) and the average temperature of the biosolid must be higher than forty-five degrees Celsius (45%C).

(6) The pH of a biosolid is raised to 12 or higher by alkali addition and, without the addition of more alkali, must remain at 12 or higher for two (2) hours and then at 11.5 or higher at the time the biosolid is applied to the land or distributed in a marketing and distribution program under 327 IAC 6.1-5.

(7) The percent total solids of a biosolid that does not contain unstabilized solids generated in a primary wastewater treatment process is equal to or greater than sev-

enty-five percent (75%) at the time the biosolid is applied to the land or distributed in a marketing and distribution program under 327 IAC 6.1-5.

(8) The percent total solids of a biosolid that contains unstabilized solids generated in a primary wastewater treatment process is equal to or greater than ninety percent (90%) at the time the biosolid is applied to the land or distributed in a marketing and distribution program under 327 IAC 6.1-5.

(9) A biosolid injected below the surface of the land must:

(A) have no significant amount of the biosolid present on the land surface within one (1) hour after the biosolid is injected; and

(B) when the biosolid is Class A under section 13(b) of this rule, with respect to pathogens, be injected below the land surface within eight (8) hours after being discharged from the pathogen treatment process.

(10) A biosolid applied to the land surface must:

(A) unless otherwise approved by the commissioner, be incorporated into the soil within six (6) hours after application to or placement on the land; and

(B) when a biosolid is Class A under section 13(b) of this rule, with respect to pathogens, must be applied to or placed on the land within eight (8) hours after being discharged from the pathogen treatment process.

(c) For purposes of subsection (b)(6), the pH of biosolid must be measured at twenty-five degrees Celsius (25%C) or measured at another temperature and then converted to an equivalent value at twenty-five degrees Celsius (25%C).

*Methods referenced in this section may be obtained as follows:

(1) EPA-625/R-92/013, "Environmental Regulations and Technology_Control of Pathogens and Vectors in Sewage Sludge", is available from U.S. Environmental Protection Agency, Cincinnati, Ohio, 1992.

(2) Part 2710 B may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005.

These methods are also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3799.]

327 IAC 6.1-4-16 --- Land application of biosolid and industrial waste product: monitoring and analysis

(a) Characteristics of a biosolid or industrial waste product must be monitored as required in this section.

(b) The resulting analyses of such characteristics must be reported on both a wet weight and dry weight basis.

(c) Analyses of additional parameters may be required by the commissioner on a case-by-case basis to protect the environment or public health.

(d) Biosolid or industrial waste product that is to be applied to the land must be monitored each day of land application for percent total solids.

(e) Prior to land application, representative samples of biosolid or industrial waste product that is to be applied to the land shall be collected and analyzed at the frequency listed in Table 6 in subsection (f) for the following parameters:

(1) Percent total solids.

(2) The following total metals:

(A) Arsenic.

(B) Cadmium.

(C) Copper.

(D) Lead.

(E) Mercury.

(F) Molybdenum.

(G) Nickel.

(H) Selenium.

(I) Zinc.

(3) Polychlorinated biphenyls (PCBs).

(4) The applicable pathogen density requirements in section 13 of this rule.

(5) The applicable vector attraction reduction requirements in section 15(b) of this rule or an equivalent vector attraction reduction requirement as determined by the commissioner.

(f) The results of the analysis in subsection (e) are valid for the applicable length of time listed in Table 6 as follows:

Table 6

Frequency of Monitoring

Amount of Biosolid or Industrial Waste Product[1] (dry tons per 365 day period)	Frequency of Monitoring[2]
Greater than 0 but less than 100	12 months
Equal to or greater than 100 but less than 300	3 months
Equal to or greater than 300 but less than 1,000	2 months
Equal to or greater than 1,000	1 month

[1]For existing facilities, either the amount of biosolid or industrial waste product generated in the previous year or the amount of biosolid or industrial waste product received by a person who prepares biosolid or industrial waste product that is marketed or distributed for application to the land, dry weight basis. For new facilities, the amount determined by engineering estimates for generation of biosolid or industrial waste product for the specific new facility.

[2]For the purposes of this table, a month is a 30 day period.

(g) After the biosolid or industrial waste product has been monitored for two (2) years at the frequency in Table 6 in subsection (f), the person who prepares a biosolid or industrial waste product may request a reduced frequency of monitoring from the commissioner for pollutant concentrations in subsection (e).

(h) If the person who prepares a biosolid or industrial waste product can demonstrate to the satisfaction of the commissioner that the biosolid or industrial waste product has contained no detectable concentrations of PCBs for the previous two (2) years, the commissioner may reduce the required monitoring frequency for PCBs.

(i) For each thirty (30) day period that biosolid or industrial waste product is applied, a composite sample of the biosolid or industrial waste product sufficient for analysis must be collected and analyzed for the following:

(1) Percent total solids.

(2) Total nitrogen.

(3) Ammonia nitrogen.

(4) Nitrate nitrogen.

(5) Phosphorus.

(6) Potassium.

(j) Alternative equivalent methods meeting the requirements of 327 IAC 6.1-3-1(e)(5) may be used if the person who prepares a biosolid or industrial waste product receives prior written approval from the commissioner.

[As added at: 21 IR 3800.]

327 IAC 6.1-4-17 --- Land application of biosolid and industrial waste product: records and record keeping

(a) Information regarding application rates and site conditions must be recorded daily by the person who prepares a biosolid or industrial waste product or as otherwise specified by the permit.

(b) The person who prepares a biosolid or industrial waste product shall record the monitoring results and information required by section 16 of this rule. Such records must be:

(1) retained by the person who prepares the biosolid or industrial waste product for:

(A) a minimum of five (5) years; or

(B) a longer time if required by the commissioner in the permit; and

(2) accessible to department representatives at the facility or other location clearly identified in writing to the commissioner.

(c) For biosolid or industrial waste product that is applied to any land application site under 327 IAC 6.1-4 the following applies:

(1) The person who prepares the biosolid or industrial waste product shall develop the following information and shall retain the information for five (5) years:

(A) The results of the analyses conducted under section 16 of this rule.

(B) A certification statement on forms and in a format prescribed by the commissioner.

(C) A description of how the Class A pathogen require ments in section 13(b) of this rule or Class B pathogen requirements in section 13(c) of this rule are met.

(D) When one (1) of the vector attraction reduction requirements in section 15(b)(1) through 15(b)(8) of this rule is met, a description of how the vector attraction reduction requirement is met.

(E) The information in subdivision (3)(E) through (3)(G) provided by the person who applies the biosolid or industrial waste product.

(2) The person who prepares the biosolid or industrial waste product shall develop the following information and shall retain the information indefinitely:

(A) The cumulative amount of each pollutant in pounds per acre listed in Table 2 in section 9(b) of this rule in the biosolid or industrial waste product applied to each site, including the amount in section 3(e)(3) of this rule.

(B) A description of how the requirements to obtain information in section 3(e) of this rule are met.

(C) The information in subdivision (3)(A) through (3)(D) provided by the person who applies the biosolid or industrial waste product.

(3) For each day in which biosolid or industrial waste product is applied, the person who applies the biosolid or industrial waste product shall develop the following information and provide it to the person who prepares the biosolid or industrial waste product:

(A) The location, indicated on a site map, of each site that biosolid or industrial waste product is applied.

(B) The number of acres in each site to which biosolid or industrial waste product is applied.

(C) The date biosolid or industrial waste product is applied to each site.

(D) The amount of biosolid or industrial waste product in dry tons applied to each site.

(E) A description of how the site restrictions in section 6 of this rule and the management practices in section 7 of this rule are met for each site on which biosolid or industrial waste product is applied.

(F) When the vector attraction reduction requirement in either section 15(b)(9) or 15(b)(10) of this rule is met, a certification statement on forms prescribed by the commissioner.

(G) If the vector attraction reduction requirements in either section 15(b)(9) or 15(b)(10) of this rule are met, a description of how the requirements are met.

[As added at: 21 IR 3801.]

327 IAC 6.1-4-18 --- Land application of biosolid and industrial waste product: reports and reporting

(a) Activities and analyses related to land application of a biosolid or industrial waste product must be reported:

(1) to the commissioner each within thirty (30) days of the last day of each calendar month for the term of the permit; and

(2) submitted on forms and in a format prescribed by the commissioner.

(b) The person who prepares a biosolid or industrial waste product shall notify the commissioner of the cumulative application on a land application site of any metal in Table 2 in section 9(b) of this rule for the applied biosolid or industrial waste product in a quantity equal to or greater than ninety percent (90%) of the quantity specified in Table 2 in section 9(b) of this rule within thirty (30) days after that level is reached.

(c) The quantity of all metals listed in Table 2 in section 9(b) of this rule that are applied to the land application site will be forwarded by the commissioner to the county recorder of the county where the land application site is located for inclusion in the permanent land records when ninety percent (90%) of the level of any metal is reached as per Table 2 in section 9(b) of this rule.

[As added at: 21 IR 3801.]

327 IAC 6.1-4-19 --- Land application of biosolid and industrial waste product: research and demonstration projects

Biosolid or industrial waste product may be used for research and demonstration projects in accordance with IC 13-30-2-1(7) if a plan with the following information is submitted and approved by the commissioner:

(1) Name, address, phone number, and authorizing signatures of:

(A) the person conducting the research or demonstration project;

(B) the responsible person designated from the facility providing the biosolid or industrial waste product; and

(C) the owner of the property upon which the research or demonstration project will be conducted.

(2) Narrative statement of goals and objectives of research or demonstration project.

(3) Description of experimental design.

(4) Description and quantity of material.

(5) Analytical data.

(6) Location of property upon which research or demonstration project will be conducted.

(7) Duration of project.

(8) Other applicable information.

[As added at: 21 IR 3802.]

327 IAC 6.1-4-20 --- Land application of biosolid and industrial waste product: alternative uses of biosolid at a domestic sewage treatment works

A domestic sewage treatment works that holds a valid permit under this article may use the permitted biosolid on the treatment works grounds under the following conditions:

(1) The biosolid must be dewatered.

(2) No more than one (1) dry ton of a biosolid may be used during any twelve (12) month period.

(3) A biosolid may not be used on land with a high potential for public exposure.

(4) Application of a biosolid must be in accordance with the permit.

[As added at: 21 IR 3802.]

RULE 5. MARKETING AND DISTRIBUTION PERMIT

327 IAC 6.1-5-1 ----- Marketing and distribution permit: eligibility criteria for biosolid

For a biosolid to be eligible for a marketing and distribution permit, the following criteria must be met:

(1) The Class A pathogen requirements in 327 IAC 6.1-4-13(b).

(2) Compliance with at least one (1) of the vector attraction reduction requirements in 327 IAC 6.1-4-15(b)(1) through 327 IAC 6.1-4-15(b)(8) or an equivalent vector attraction reduction requirement as determined by the commissioner.

(3) The pollutant concentrations are less than the concentrations in Table 1 in 327 IAC 6.1-4-9(a) and Table 3 in 327 IAC 6.1-4-9(c).

(4) The biosolid must be dewatered.

(5) The biosolid must not contain a concentration of polychlorinated biphenyls (PCBs) of two (2) milligrams per kilogram or greater on a dry weight basis.

[As added at: 21 IR 3802.]

327 IAC 6.1-5-2 ----- Marketing and distribution permit: criteria industrial waste product

For an industrial waste product to be eligible for a marketing and distribution permit, the following criteria must be met:

(1) The pollutant concentrations are less than the concentrations in Table 1 in 327 IAC 6.1-4-9(a) and Table 3 in 327 IAC 6.1-4-9(c).

(2) The industrial waste product must be dewatered.

[As added at: 21 IR 3802.]

327 IAC 6.1-5-3 ----- Marketing and distribution permit: application

(a) Approval for a biosolid or industrial waste product marketing and distribution permit must be requested in an application on forms and in a format prescribed by the commissioner and submitted to the commissioner in accordance with 327 IAC 6.1-3. The application must include a proposed management plan submitted and approved by the commissioner, including the following:

(1) How the material will be marketed.

(2) Quality control measures.

(3) Treatment process description.

(4) How the material will be stored including the following:

(A) Setback distances from residences and public buildings, waters of the state, wells, and other structures.

(B) Location criteria including flood plains, floodways, slopes, seasonal high water table, soil pH, and other location criteria.

(C) Design and construction of storage structures.

(D) Nuisance control measures.

(5) Procedures for addressing noncomplying practices by end users including:

(A) a written notification of the proper use of the material to the noncomplying end user; and

(B) other applicable procedures.

(6) Other applicable information.

(b) To market or distribute biosolid or industrial waste product that is not generated in Indiana and that is to be applied to land in Indiana under a marketing and distribution permit, persons who prepare the biosolid or industrial waste product that was not generated in Indiana or marketers of the biosolid or industrial waste product that was not generated in Indiana must:

(1) be in compliance with IC 13-18-14-1; and

(2) obtain an Indiana permit by:

(A) requesting reciprocity from the commissioner; or

(B) submitting an application in accordance with subsection (a).

(c) Persons who prepare a biosolid or industrial waste product that was not generated in Indiana and that are requesting reciprocity shall hold a valid permit from another state that is at least as stringent as this article.

(d) The commissioner shall issue a permit that is valid for no longer than the expiration date of the out-of-state permit to the person who prepares a biosolid or industrial waste product that was not generated in Indiana and that is for marketing and distribution program if:

(1) a submitted application or request for reciprocity is approved by the commissioner; and

(2) the commissioner determines that the operation of the program under the proposed project description does not pose a risk to the environment or public health.

[As added at: 21 IR 3802.]

327 IAC 6.1-5-4 ----- Marketing and distribution permit: general

(a) Any person who prepares a biosolid or industrial waste product and that holds a marketing and distribution permit shall comply with the following:

(1) All permit conditions.

(2) The person who prepares a biosolid or industrial waste product shall develop and distribute an information sheet that includes the following:

(A) The name and address of the person who prepared the biosolid or industrial waste product that is marketed or distributed for application to the land.

(B) A statement that application of the biosolid or industrial waste product is prohibited, except in accordance with the instructions on the information sheet.

(C) Quality criteria based on current analytical data for the biosolid or industrial waste product.

(D) Recommended maximum application rates based upon nutrient content.

(E) For the information sheet for an industrial waste product or a biosolid containing an industrial waste product containing more than two (2) milligrams per kilogram cadmium, a statement that the soil pH must be at least 6.5 when applied to land for food crops.

(3) This information sheet must be:

(A) kept on file for the duration of the permit and for five (5) years following the expiration of the permit;

(B) updated quarterly or as specified in the permit; and

(C) be accessible to department representatives at the facility or other location approved by the commissioner.

(4) Each person who prepares a biosolid or industrial waste product is responsible for informing users of a biosolid or industrial waste product of the biosolid or industrial waste product quality and proper amounts for specific needs.

(5) Annual reports must be submitted on forms and in a format prescribed by the commissioner by January 31 of each year the material is generated, distributed, or marketed. In addition to an updated copy of the information sheet to be distributed with the material, the report must include the following information:

(A) The biosolid or industrial waste product quality and quantity generated.

(B) The name and address of recipients of more than one (1) metric ton per calendar quarter.

(b) The person who prepares a biosolid or industrial waste product under a marketing and distribution permit shall collect and analyze representative samples for the parameters listed in 327 IAC 6.1-4-16(e) and 327 IAC 6.1-4-16(i) at the applicable frequency listed in Table 6 in 327 IAC 6.1-4-16(f), except for biosolid or industrial waste product in quantities of less than one hundred (100) dry tons per three hundred sixty-five (365) day period that must be monitored at least twice per year.

(c) The person who prepares a biosolid or industrial waste product under a marketing and distribution permit in 327 IAC 6.1-5 *[this rule]* shall develop the following information and shall retain the information for five (5) years:

(1) Analyses conducted in accordance with 327 IAC 6.1-5-4(b).

(2) A certification statement on forms prescribed by the commissioner.

(3) A description of how the Class A pathogen require ments in section 13(b) of this rule are met.

(4) A description of how one (1) of the vector attraction reduction requirements in section 15(b)(1) through 15(b)(8) of this rule is met.

(5) Copies of all written notifications for noncomplying use of the material that have been sent to end users.

[As added at: 21 IR 3803.]

RULE 6. NOTIFICATIONS

327 IAC 6.1-6-1 ----- Notifications: eligibility criteria

(a) For an agricultural lime substitute to be eligible for the notification program under this rule, the following criteria must be met:

(1) Be an agricultural lime substitute that has greater than fifty percent (50%) calcium carbonate equivalency or that has a calculated adjusted lime rate of two (2) tons per acre or less using a recommended agricultural lime rate of one (1) ton per acre and a depth factor of seventy-five hundredths (0.75).

(2) Contain no biosolid.

(3) Pollutant concentrations are less than the concentrations in Table 1 in 327 IAC 6.1-4-9(a) and Table 3 in 327 IAC 6.1-4-9(c).

(4) Be dewatered.

(5) Must not contain a concentration of polychlorinated biphenyls (PCBs) of two (2) milligrams per kilogram or greater on a dry weight basis.

(b) For purposes of this article, agricultural lime substitute does not include the following:

(1) Unprocessed fly ash.

(2) Cement kiln dust.

(3) Alum sludges from water treatment facilities.

[As added at: 21 IR 3804.]

327 IAC 6.1-6-2 ----- Notifications: agricultural lime substitute notifications; general

(a) The person who prepares an agricultural lime substitute under the notification program shall submit a written notification to the commissioner of the activity:

(1) at least thirty (30) days before initial application of the agricultural lime substitute; and

(2) by January 31 of each subsequent year in which the agricultural lime substitute will be applied.

(b) The written notification must contain the following information:

(1) The name and address of the person who prepares the agricultural lime substitute.

(2) The name and address of the person who applies the agricultural lime substitute.

(3) An analysis of the agricultural lime substitute, including the following:

(A) Calcium carbonate equivalency.

(B) The pollutants listed in Table 1 of 327 IAC 6.1-4-9(a).

(c) Unless notified by the commissioner within thirty (30) days after submitting a written notification, the person who prepares an agricultural lime substitute and that submitted the written notification may begin applying the agricultural lime substitute in compliance with this rule.

(d) Analyses for the following must be conducted quarterly:

(1) The pollutants listed in Table 1 of 327 IAC 6.1-4-9(a).

(2) The percent passing mesh size*.

(3) The calcium carbonate equivalency*.

(e) The person who prepares an agricultural lime substitute and that is operating under the notification program shall maintain records of the following information for five (5) years and report to the commissioner the following information by January 31 of each year in which agricultural lime substitute was applied:

(1) The results of analyses in subsection (d).

(2) The quantity of the material applied during the previous year.

*Methods for the percent passing mesh size and calcium carbonate equivalency may be found in Agriculatural Liming Materials, Frank Johnson, Associate Chapter Editor, National Fertilizer Development Center, Tennessee Valley Authority, Official Methods of Analysis, Association of Official Analytical Chemists, Agricultural Chemicals; Contaminants; Drugs, Volume One, 15th Edition, 1990. Edited by Kenneth Helrich, available from the Association of Official Analytical Chemists, Inc., Suite 400, 2200 Wilson Boulevard, Arlington, Virginia 22201. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3804.]

327 IAC 6.1-6-3 ----- Notifications: agricultural lime substitute application

Agricultural lime substitute may not be applied in excess of the adjusted lime rate as determined by Equation 4 as follows:

Equation 4:

Adjusted Lime Rate = RALR x FF x NF x DF

Where: RALR = Recommended agricultural lime rate from the soil analysis of the application site.

FF = Fineness factor.

NF = Neutralizing factor.

DF = Depth factor.

Table 7 Fineness Factor

Percent Passing Mesh Size				Fineness Factor (FF)
8	20	60	100	
100	100	100	100	.60
100	100	95	80	.63
100	95	70	60	.76
95	70	50	40	1.00
85	60	40	30	1.19
80	50	30	20	1.45
80	45	20	10	1.77
80	40	15	5	2.03

Table 8 Neutralizing Factor

CCE*	Neutralizing Factor (NF)
110-119	.83
100-109	.90
90-99	1.00
80-89	1.12
70-79	1.27
60-69	1.46
50-59	1.73
40-49	2.00

*CCE = Calcium Carbonate Equivalency

Table 9 Depth Factor

Plowing Depth (Inches)	Depth Factor (DF)
2	.25
4	.50
6	.75
8	1.00
10	1.25
12	1.50

[As added at: 21 IR 3804.]

RULE 7. LAND APPLICATION OF POLLUTANT-BEARING WATER

327 IAC 6.1-7-1 ----- Land application of pollutant-bearing water: land application

(a) Land application or injection of pollutant-bearing water must be conducted under the supervision of:

(1) a certified wastewater treatment plant operator licensed under 327 IAC 8; or

(2) a person with at least one (1) year of experience in land application management practices and procedures.

Notice must be submitted to the commissioner of any change in supervisor of the activity.

(b) Any application of domestic wastewater or industrial process wastewater to the land is prohibited unless a valid site-specific land application permit in accordance with 327 IAC 6.1-1-3(b) has been obtained from the commissioner prior to the application of the domestic wastewater or industrial process wastewater.

(c) Any person who prepares industrial storm water that exceeds any of the pollutant concentrations in Table 10 of subsection (d) shall obtain a permit under subsection (b).

(d) Industrial storm water that exceeds any of the pollutant concentration limits in Table 10 is subject to this rule:

Table 10

Pollutant Concentrations for Industrial Storm Water

Pollutant	mg/l
Arsenic	0.07
Cadmium	0.06
Copper	2.57
Lead	0.51
Mercury	0.02
Nickel	0.72
Selenium	0.17
Zinc	4.80

[As added at: 21 IR 3805.]

327 IAC 6.1-7-2 ----- Land application of pollutant-bearing water: on land with a high potential for public exposure

(a) Pollutant-bearing water applied to land with a high potential for public exposure must be treated by subdivisions (1) and (2) in the following order before being applied to the land:

(1) Secondary treatment and any additional treatment necessary to produce effluent in which both BOD is less than or equal to ten (10) milligrams per liter and suspended solids do not exceed five (5) milligrams per liter and that must include:

(A) activated sludge processes;

(B) trickling filters;

(C) rotating biological contactors;

(D) stabilization pond systems; or

(E) other secondary treatment approved by the commissioner in the permit.

(2) For domestic wastewater, disinfection by:

(A) chlorination;

(B) ozonation;

(C) chemical disinfectants;

(D) UV radiation;

(E) membrane processes; or

(F) other processes approved by the commissioner in the permit.

(b) Pollutant-bearing water to be applied to land with a high potential for public exposure must meet the following water quality criteria at the time of application:

(1) The pH must be between 6 and 9 standard units.

(2) The BOD must be less than or equal to ten (10) milligrams per liter as determined from the five (5) day BOD test.

(3) For domestic wastewater, suspended solids must not exceed five (5) milligrams per liter averaged over a twenty-four (24) hour period prior to disinfection.

(4) For domestic wastewater, analysis for fecal coliform using Part 9221 E* or Part 9222 D* must include the following:

(A) Using values determined from the bacteriological results of the last seven (7) days for which analyses have been completed:

(i) no detectable fecal coliform is found using the median value; and

(ii) the number of fecal coliform organisms must not exceed fourteen (14) per one hundred (100) milliliters in any sample.

(B) Analysis must be completed using one (1) of the following:

(i) Membrane filter technique.

(ii) Fermentation tube technique.

(5) If chlorination is used as the means of disinfection, the total chlorine residual after a minimum contact time of thirty (30) minutes must be at least one (1) milligram per liter.

(6) All applicable permit conditions.

(c) Monitoring for pollutant-bearing water to be applied to land with a high potential for public exposure must be completed no less frequently than the following:

(1) pH must be monitored at least weekly.

(2) BOD must be monitored at least weekly.

(3) For domestic wastewater, suspended solids must be monitored daily.

(4) For domestic wastewater, coliform must be monitored daily.

(5) For domestic wastewater, residual chlorine must be monitored daily.

(6) Pollutants listed in Table 2 in 327 IAC 6.1-4-9(b) must be monitored at least annually.

(7) Monitoring at least monthly is required for the following:

(A) Total nitrogen.

(B) Ammonium nitrogen.

(C) Nitrate nitrogen.

(D) Phosphorus.

(E) Potassium.

*Part 9221 E and Part 9222 D may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3805.]

327 IAC 6.1-7-3 ----- Land application of pollutant-bearing water: domestic wastewater application on land with a low potential for public exposure

(a) Domestic wastewater to be applied to land with a low potential for public exposure must be treated by subdivisions (1) and (2) in the following order before application:

(1) Secondary treatment to produce effluent that has both BOD and suspended solids that do not exceed thirty (30) milligrams per liter and which must include:

(A) activated sludge processes;

(B) trickling filters;

(C) rotating biological contactors;

(D) stabilization pond systems; or

(E) other secondary treatment approved by the commissioner in the permit.

(2) Disinfection by:

(A) chlorination;

(B) ozonation;

(C) chemical disinfectants;

(D) UV radiation;

(E) membrane processes; or

(F) other processes approved by the commissioner in the permit.

(b) Domestic wastewater to be applied to land with a low potential for public exposure must meet the following water quality criteria at the time of application:

(1) The pH must be between 6 and 9 standard units.

(2) The BOD must be less than or equal to thirty (30) milligrams per liter as determined from the five (5) day BOD test.

(3) Less than or equal to thirty (30) milligrams per liter suspended solids.

(4) The analysis for fecal coliform using Part 9221 E* and Part 9222 D* must include the following using values determined from the bacteriological results of the last seven (7) days for which analyses have been completed:

(A) The median fecal coliform level must be less than or equal to two hundred (200) fecal coliform per one hundred (100) milliliters.

(B) The number of fecal coliform organisms must not exceed eight hundred (800) per one hundred (100) milliliters in any sample.

(5) If chlorination is used as the means of disinfection, the total chlorine residual after a minimum contact time of thirty (30) minutes must be at least one (1) milligram per liter.

(c) Stabilization pond systems approved by the commissioner may be used to meet coliform limits without the use of disinfection.

(d) No restrictions are placed on fecal coliform organisms in domestic wastewater for land application on land to which public access is strictly restricted and food crops are not grown.

(e) Monitoring for domestic wastewater to be applied to land with a low potential for public exposure must be completed no less frequently than the following:

(1) pH must be monitored at least weekly.

(2) BOD must be monitored at least weekly.

(3) Suspended solids must be monitored daily.

(4) Coliform must be monitored daily.

(5) Residual chlorine must be monitored daily.

(6) Pollutants listed in Table 2 of 327 IAC 6.1-4-9(b) must be monitored at least annually.

(7) Monitoring at least monthly is required for the following:

(A) Total nitrogen.

(B) Ammonium nitrogen.

(C) Nitrate nitrogen.

(D) Phosphorus.

(E) Potassium.

*Part 9221 E and Part 9222 D may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3806.]

327 IAC 6.1-7-4 ----- Land application of pollutant-bearing water: industrial process wastewater and storm water application on land with a low potential for public exposure

(a) Industrial process wastewater and industrial storm water to be applied to land with a low potential for public exposure must have a pH between 6 and 9 standard units.

(b) Monitoring for industrial process wastewater and industrial storm water to be applied to land with a low potential for public exposure must be completed no less frequently than the following:

(1) pH must be monitored at least weekly.

(2) BOD must be monitored at least weekly.

(3) Volatile solids must be monitored at least weekly using Part 2540 G*.

(4) Pollutants listed in Table 3 of 327 IAC 6.1-4-9(c) must be monitored at least annually.

(5) Monitoring at least monthly is required for the following:

(A) Total nitrogen.

(B) Ammonium nitrogen.

(C) Nitrate nitrogen.

(D) Phosphorus.

(E) Potassium.

*Part 2540 G may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3807.]

327 IAC 6.1-7-5 ----- Land application of pollutant-bearing water: site restrictions

(a) Pollutant-bearing water to be applied to land must be applied at least:

(1) two hundred (200) feet from potable water supply wells or drinking water springs;

(2) three hundred (300) feet from any waters of the state; and

(3) three hundred (300) feet from any residence.

(b) The soil pH must be 5.5 or greater at the time the pollutant-bearing water is applied unless the commissioner determines that the soil pH should be higher to protect the environment or public health.

(c) Using soil survey data established by USDA Natural Resource Conservation Service, application of pollutant-bearing water is prohibited if:

(1) the seasonal high water table is within eighteen (18) inches of the soil surface; or

(2) the seasonal high water table is:

(A) within thirty-six (36) inches of the soil surface; and

(B) any soil layer between eighteen (18) inches and thirty-six (36) inches below the surface has a permeability of greater than two (2) inches per hour.

(d) Pollutant-bearing water must not be applied to land unless there is a minimum depth of twenty (20) inches of soil overlying bedrock.

(e) Application of pollutant-bearing water on slopes greater than six percent (6%) is prohibited.

[As added at: 21 IR 3807.]

327 IAC 6.1-7-6 ----- Land application of pollutant-bearing water: management practices

(a) Food crops shall not be harvested for fourteen (14) months after land application of domestic wastewater if the harvested part:

(1) touches the ground where domestic wastewater has been land applied; and

(2) has no harvested parts below the soil surface.

(b) Food crops shall not be harvested for thirty-eight (38) months after land application of domestic wastewater if harvested parts are below the soil surface.

(c) Unless subsection (a) or (b) applies, food crops, feed crops, and fiber crops shall not be harvested for thirty (30) days after land application of domestic wastewater.

(d) Turf grown on land where domestic wastewater is land applied shall not be harvested for one (1) year after application of the domestic wastewater if the harvested turf is placed on either land with a high potential for public exposure or a lawn unless otherwise approved by the commissioner.

(e) Public access to land with a low potential for public exposure shall be restricted for thirty (30) days after land application of domestic wastewater to that land.

(f) Grazing of animals on land that has received domestic wastewater is prohibited for thirty (30) days after application of the domestic wastewater.

(g) Pollutant-bearing water shall not be applied to the land:

(1) if the pollutant-bearing water is likely to adversely affect a threatened or endangered species or its designated critical habitat; or

(2) in violation of endangered species regulations at IC 14-22-34.

(h) Pollutant-bearing water shall not be applied to the land in violation of historic preservation requirements under IC 14-20-1 or 310 IAC 15-3.

(i) Application of pollutant-bearing water is prohibited if the moisture holding capacity of the soil is exceeded as a result of previous land application practices, precipitation occurrences, or flooding.

(j) Pollutant-bearing water may only be applied to land that is frozen or snow-covered if:

(1) the pollutant-bearing water does not enter a wetland or other waters of the state; and

(2) a management plan has been submitted and approved by the commissioner, including the following:

(A) Setbacks.

(B) Application rates.

(C) Site characteristics.

(D) Supervision and operational oversight.

(E) Other applicable information.

(k) Pollutant-bearing water may only be applied in a flood plain if the pollutant-bearing water does not enter a wetland or other waters of the state.

[As added at: 21 IR 3808.]

327 IAC 6.1-7-7 ----- Land application of pollutant-bearing water: domestic wastewater treatment reliability criteria

The supervisor of a domestic sewage treatment works requiring disinfection equipment dependent upon electricity for operation shall submit documentation for approval by the commissioner demonstrating the ability to:

(1) provide an alternative power source sufficient to operate pathogen reduction equipment to a degree that pathogen limitations detailed in section 2 or 3 of this rule are achieved;

(2) upon the reduction, loss, or failure of power to the disinfection equipment, cease land application of domestic wastewater and cease discharge to a domestic wastewater storage structure used for land application of domestic wastewater for a period of seventy-two (72) hours; or

(3) provide an effective alternate method of disinfection, sufficient to a degree that pathogen limitations detailed in section 2 or 3 of this rule are achieved, approved by the commissioner, that does not require electricity for proper operation.

[As added at: 21 IR 3808.]

327 IAC 6.1-7-8 ----- Land application of pollutant-bearing water: prohibitions for pollutant-bearing water application

(a) Application is prohibited under environmental conditions that would result or are likely to result in pollutant-bearing water leaving the land application site.

(b) Land application of a pollutant-bearing water containing concentrations of polychlorinated biphenyls (PCBs) of two (2) milligrams per kilogram or greater on a dry weight basis is prohibited.

[As added at: 21 IR 3808.]

327 IAC 6.1-7-9 ----- Land application of pollutant-bearing water: storage of pollutant-bearing water for application

(a) A minimum of ninety (90) days effective storage capacity is required for a pollutant-bearing water unless an equivalent method of meeting the requirement is approved by the commissioner.

(b) Except for earthen lagoons under 327 IAC 6.1-8, any storage structures, such as pits or tanks, which are subject to volume fluctuations due to precipitation events, must have a minimum of one (1) foot of freeboard at all times.

(c) A construction permit must be obtained from the commissioner under 327 IAC 3 prior to construction of storage structures located at the treatment works that generates the pollutant-bearing water.

(d) Off-site storage structures for the storage of pollutant- bearing water must be constructed and maintained in accordance with 327 IAC 6.1-8.

[As added at: 21 IR 3809.]

327 IAC 6.1-7-10 --- Land application of pollutant-bearing water: loading rates

(a) Maximum loading rates are determined for the pollutant-bearing water to be applied on the basis of the following parameters:

(1) Hydraulic loads must not exceed the rates established in Table 11 as follows and a rate of two (2) inches per seven (7) day period:

Table 11

Maximum Application Rates

Application Rate in Inches per Hour

Textural Class	Grass Sod	Cultivated
Sand	1.5	0.8
Loamy sand	1.3	0.7

Sandy loam	0.9	0.5
Fine sandy loam	0.8	0.5
Loam	0.7	0.4
Silt loam	0.7	0.4
Clay loam	0.6	0.3
Clay	0.5	0.2
Organic soils (muck)	1.0	1.0

(2) Organic loading for industrial process wastewaters must not exceed the following:

(A) One thousand four hundred (1,400) pounds per acre per week of volatile solids as determined using Part 2540 G*.

(B) Nine hundred thirty-three (933) pounds per acre per week of BOD as determined by a five (5) day BOD test.

(C) The commissioner may approve a higher loading rate if the commissioner determines that adequate documentation has been presented to show effective operation at higher loading rates.

(3) Available nitrogen loadings must not exceed either of the following:

(A) The limits in Table 5 in 327 IAC 6.1-4-10(a)(1)(A) for crop production as determined using the methodology for calculating available and residual nitrogen values in subsection (b).

(B) The nitrogen removal rate for the proposed crop to be grown on the land application site adjusted to account for application of fertilizers and manure and the presence of residual available nitrogen in the soil from previous applications of a biosolid, industrial waste product, or pollutant-bearing water.

(4) Phosphorus loading requirements may be included as a permit condition if the commissioner determines it is necessary for protection of public health or the environment.

(5) Annual heavy metal loadings must not exceed the limits in Table 4 in 327 IAC 6.1-4-9(d).

(b) The following formulas for PAN loading calculations apply to this article and must be used to calculate the amount of PAN in the pollutant-bearing water and the residual available nitrogen at the application site; all calculations are based on a wet weight basis in milligrams per liter:

(1) Total N = Total Kjeldahl N + Nitrate N

(2) Organic N = Total N - (Ammonium N + Nitrate N)

(3) Pounds Organic N applied per acre =

$$\frac{\text{(Organic N) x (gallons applied) x (8.34)}}{\text{(3.33) x (1,000,000) x (acres applied to)}}$$

(4) Pounds of Ammonium N applied per acre =

$$\frac{\text{(Ammonium N) x (gallons applied) x (8.34)}}{\text{(1,000,000) x (acres applied to)}}$$

(5) Pounds of Nitrate N applied per acre =

$$\frac{\text{(Nitrate N) x (gallons applied)x (8.34)}}{\text{(1,000,000) x (acres applied to)}}$$

(6) Pounds PAN applied per acre = Pounds of Organic N applied per acre + Pounds of Ammonium N applied per acre + Pounds of Nitrate N applied per acre

(7) Residual nitrogen from past biosolid or industrial waste products applications:

(A) Pounds of residual N available per acre after one (1) year =

$$\frac{\text{(Organic N) x (gallons applied) x (8.34)}}{\text{(6.67) x (1,000,000) x (acres applied to)}}$$

(B) Pounds of residual N available per acre after two (2) years =

$$\frac{\text{(Organic N) x (gallons applied) x (8.34)}}{\text{(12.5) x (1,000,000) x (acres applied to)}}$$

(C) Pounds of residual N available per acre after three (3) years =

$$\frac{\text{(Organic N) x (gallons applied) x (8.34)}}{\text{(25) x (1,000,000) x (acres applied to)}}$$

Where N = Nitrogen.

*Part 2540 G may be found in "Standard Methods for the Examination of Water and Wastewater", 18th Edition, 1992, available from American Public Health Association, 1015 15th Street, N.W., Washington, D.C. 20005. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3809.]

327 IAC 6.1-7-11 ---- Land application of pollutant-bearing water: records and record keeping

(a) Information regarding application rates and site conditions must be recorded daily or as otherwise specified in the permit by the person who prepares a pollutant-bearing water.

(b) The person who prepares a pollutant-bearing water shall record the applicable monitoring results and information required by sections 2(c), 3(e), and 4(b) of this rule. Such records must be:

(1) retained by the person who prepares the pollutant-bearing water for:

(A) a minimum of five (5) years; or

(B) a longer time if required by the commissioner; and

(2) accessible to department representatives at the facility or other location approved by the commissioner.

(c) For pollutant-bearing water that is applied to any land application site under 327 IAC 6.1-7, the following applies:

(1) The person who prepares the pollutant-bearing water shall retain the information in subdivision (3)(E), provided by the person who applies the pollutant-bearing water, for five (5) years.

(2) The person who prepares the pollutant-bearing water shall develop the following information and shall retain the information indefinitely:

(A) The cumulative amount of each pollutant in pounds per acre listed in Table 2 in 327 IAC 6.1-4-9(b) in the pollutant-bearing water applied to each site.

(B) The information in subdivision (3)(A) through (3)(D) provided by the person who applies the pollutant-bearing water.

(3) For each day of land application of the pollutant-bearing water, the person who applies the pollutant-bearing water shall develop the following information and provide it to the person who prepares the pollutant-bearing water:

(A) The location, indicated on a site map, of each site that the pollutant-bearing water is applied.

(B) The number of acres to which pollutant-bearing water is applied.

(C) The date the pollutant-bearing water is applied to each site.

(D) The amount of pollutant-bearing water in gallons applied to each site.

(E) A description of how the site restrictions in section 5 of this rule and the management practices in section 6 of this rule are met for each site on which pollutant-bearing water is applied.

[As added at: 21 IR 3810.]

327 IAC 6.1-7-12 --- Land application of pollutant-bearing water: reports and reporting

(a) Activities and analyses related to land application of pollutant-bearing water must be reported:

(1) to the commissioner within thirty (30) days of the last day of each month for the term of the permit; and

(2) submitted on forms and in a format prescribed by the commissioner.

(b) The person who prepares the pollutant-bearing water shall notify the commissioner of the cumulative application on a land application site of any metal in Table 2 of 327 IAC 6.1-4-9(b) for the applied pollutant-bearing water in a quantity equal to or greater than ninety percent (90%) of the quantity specified in Table 2 of 327 IAC 6.1-4-9(b) within thirty (30) days after the ninety percent (90%) level is reached.

(c) The quantity of metals listed in Table 2 of 327 IAC 6.1-4-9(b) that is applied to the land application site will be forwarded by the commissioner to the county recorder of the county where the land application site is located for inclusion in the permanent land records when ninety percent (90%) of any metal is reached as per Table 2 of 327 IAC 6.1-4-9(b).

[As added at: 21 IR 3810.]

RULE 8. OFF-SITE STORAGE STRUCTURES

327 IAC 6.1-8-1 ----- Off-site storage structures: general requirements

(a) This rule applies to all off-site storage structures for the storage of biosolid, industrial waste product, or pollutant-bearing water unless permitted under:

(1) the marketing and distribution program in 327 IAC 6.1-5; or

(2) the notification program in 327 IAC 6.1-6.

(b) Except for in subsection (c), off-site storage structures for the storage of biosolid, industrial waste product, or pollutant-bearing water must be constructed, installed, maintained, and closed in accordance with this rule.

(c) Construction, installation, and operation of underground storage tanks for the storage of biosolid, industrial waste product, or pollutant-bearing water must be done in accordance with 329 IAC 9.

(d) Earthen lagoons must not be constructed for the off-site storage of biosolid, industrial waste product, or pollutant-bearing water except in accordance with sections 2 and 6 of this rule.

(e) Except for earthen lagoons and off-site storage structures approved under subsection (f), off-site storage structures for the storage of biosolid, industrial waste product, or pollutant-bearing water must be constructed or installed in compliance with this rule and with written notification to the commissioner prior to construction or installation of the off-site storage structure, to include the following:

(1) The location, indicated on a site map, of each off-site storage structure.

(2) The name, address, and phone number of the property owner of all locations in subdivision (1).

(3) The name, address, and phone number of the person who prepares the biosolid, industrial waste product, or pollutant-bearing water to be stored at the locations.

(4) The design of the off-site storage structure.

(5) The capacity of the off-site storage structure.

(6) A description of the biosolid, industrial waste product, or pollutant-bearing water to be stored.

(f) The notification requirement in subsection (e) does not apply to off-site storage structures that use alternatives to:

(1) the site restrictions listed in section 3 of this rule; or

(2) the construction performance standards listed in section 4 or 5 of this rule.

Off-site storage structures that use alternatives to the requirements listed in section 3, 4, or 5 of this rule must be approved by the commissioner.

(g) Information about off-site storage structures, except earthen lagoons, constructed on or before the effective date of this rule must be submitted to the commissioner in a written notification that includes information in subsection (e)(1) through (e)(5) prior to use, or continued use, of the structure for the off-site storage of biosolid, industrial waste product, or pollutant-bearing water.

(h) Unless approved by the commissioner prior to the effective date of this rule, as-built plans for earthen lagoons constructed on or before the effective date of this rule must be submitted to the commissioner for approval.

(i) A notification of off-site storage structures or a request for approval for an earthen lagoon must be accompanied by a signed statement from either the person who prepares the biosolid, industrial waste product, or pollutant-bearing water or the property owner accepting responsibility for closure and abandonment in compliance with section 8 of this rule.

[As added at: 21 IR 3811.]

327 IAC 6.1-8-2 ----- Off-site storage structures: procedures for approval of earthen lagoons

(a) Requests for approval of an earthen lagoon must be submitted at least ninety (90) days prior to the intended date of construction.

(b) The request for approval must be accompanied by plans, specifications, and sufficient information to indicate compliance with the requirements of this article. The applicant shall submit such additional information as may be required by the commissioner to make a determination.

(c) Plans and specifications for earthen lagoons must be certified by a registered professional engineer licensed to practice in Indiana.

[As added at: 21 IR 3811.]

327 IAC 6.1-8-3 ----- Off-site storage structures: site restrictions for off-site storage structures

(a) Off-site storage structures, except for earthen lagoons, must not be constructed or maintained:

(1) within one thousand (1,000) feet of any residence or public building;

(2) within three hundred (300) feet of any waters of the state;

(3) within two hundred (200) feet of any well;

(4) in a flood plain; and

(5) in a manner that allows the biosolid, industrial waste product, or pollutant-bearing water to enter surface waters.

(b) Earthen lagoons must not be constructed or maintained:

(1) within one thousand (1,000) feet of any:

(A) residence;

(B) public building; or

(C) property line;

(2) within six hundred (600) feet of any waters of the state;

(3) within two hundred (200) feet of any well;

(4) in a flood plain; and

(5) in a manner that allows the biosolid, industrial waste product, or pollutant-bearing water to enter surface waters.

[As added at: 21 IR 3811.]

327 IAC 6.1-8-4 ----- Off-site storage structures: performance standards and construction standards for off-site storage structures for liquid biosolid or industrial waste product, and pollutant-bearing water

Except for earthen lagoons, off-site storage structures for liquid biosolid or industrial waste product and for pollutant-bearing water must be constructed and maintained in accordance with the following:

(1) The structure material and wall thickness must be adequate to contain the contents.

(2) Steel tanks must be coated to prevent corrosion.

(3) Structures constructed of other materials must have prior approval of the commissioner and must be coated if necessary to prevent corrosion or afford further protection from leakage.

(4) The off-site storage structures must be adequately anchored, supported, and bedded to provide structural safety and prevent its movement.

(5) The structure must be supported by a concrete base.

(6) The bottom of any off-site storage structure constructed below the ground surface must be at least two (2) feet above the seasonal high water table and bedrock.

(7) Any discharge pipe from the off-site storage structure must be equipped with a water-tight valve and a sanitary cap or plug.

(8) The off-site storage structure must be of such construction or design as to allow inspection and sampling of the contents in the structure.

(9) The receiving or inlet facility or opening must be constructed or designed to prevent nuisance conditions, safety hazards, or the harborage and breeding of vectors.

[As added at: 21 IR 3812.]

327 IAC 6.1-8-5 ----- Off-site storage structures: performance standards and construction standards for off-site storage structures for dewatered biosolid and industrial waste product

The off-site storage structure for dewatered biosolid or industrial waste product must:

(1) have an impermeable base designed to support the stored dewatered biosolid or industrial waste product and the equipment utilized in handling the material;

(2) have leak-proof side walls at least three (3) feet in height or as otherwise approved by the commissioner;

(3) be designed and constructed to prevent contact with precipitation or to contain any contaminated storm water;

(4) be of such construction or design as to allow inspection and sampling of the contents; and

(5) be constructed or designed to prevent nuisance conditions, safety hazards, or the harborage and breeding of vectors.

[As added at: 21 IR 3812.]

327 IAC 6.1-8-6 ----- Off-site storage structures: construction for off-site earthen lagoons

Earthen lagoons must be constructed and maintained in accordance with the following:

(1) The earthen lagoon bottom must be a minimum distance of four (4) feet above the seasonal high water table and ten (10) feet above bedrock.

(2) The earthen lagoon bottom and walls must meet the design standards in "Recommended Standards for Wastewater Facilities"*.

(3) The earthen lagoon bottom must be flat.

(4) Slopes of dikes must not be steeper than 1 vertical to 3 horizontal (1:3).

(5) Minimum dike top width must be at least eight (8) feet.

(6) An all-weather off-loading area with drainage to the earthen lagoon must be provided at any point where the truck contents are off-loaded into the earthen lagoon or receiving facilities.

(7) Earthen lagoons must be constructed in a manner to prevent entry of storm water from surrounding areas.

*The earthen lagoon bottom and walls design standards may be found in "Recommended Standards for Wastewater Facilities", 1990 Edition, available from Health Education Services, P.O. Box 7126, Albany, New York 12224, Chapter 90, Pond Bottom, pages 90-19 to 90-20. This method is also available for copying at the Indiana Department of Environmental Management, Office of Solid and Hazardous Waste Management, 100 North Senate Avenue, Room 1154, Indianapolis, Indiana 46204.

[As added at: 21 IR 3812.]

327 IAC 6.1-8-7 ----- Off-site storage structures: operational requirements for off-site storage structures

(a) The off-site storage structure must be maintained and operated to prevent any nuisance or health hazards as follows:

(1) Unauthorized access to the off-site storage structure must be prevented by locks or the facility must be adequately fenced and posted.

(2) Off-site storage structures must be maintained such that there is no discharge or seepage of biosolid, industrial waste product, or pollutant-bearing water from the off-site storage structure other than controlled removal for final disposal or land application of the biosolid, industrial waste product, or pollutant-bearing water.

(3) Off-site storage structures must be maintained to prevent nuisance conditions, safety hazards, or the harborage and breeding of vectors.

(4) Off-site storage structures must be maintained such that there is no discharge of pollutants into the waters of the state.

(b) The earthen lagoon must be maintained and operated in accordance with the following:

(1) The earthen lagoon dikes must be maintained free of weeds, burrowing animals, and other conditions that may undermine the integrity of the dikes.

(2) The earthen lagoon dikes and banks must be seeded with grass to provide cover to prevent erosion.

(3) The earthen lagoon location must be posted, fenced, or otherwise secured to prevent access by unauthorized persons and livestock.

(4) The minimum freeboard must be eighteen (18) inches at all times.

[As added at: 21 IR 3813.]

327 IAC 6.1-8-8 ----- Off-site storage structures: closure and abandonment of off-site storage structures

In the event an off-site storage structure ceases to be operated or used for more than two (2) years, it is the responsibility of the person who signed the statement submitted in accordance with section 1(e) of this rule to abandon the off-site storage structure properly. The following steps are required:

(1) The commissioner shall be notified at least thirty (30) days in advance that the off-site storage site is to be abandoned.

(2) The contents of an off-site storage structure must be disposed of in a manner consistent with this article and as required by the commissioner.

(3) An earthen lagoon must be either:

(A) leveled or filled with earth and its appurtenances removed; or

(B) cleaned and closed in an alternative manner that has been approved by the commissioner.

(4) An off-site storage structure must be dismantled and removed or its interior filled with earth.

(5) The site shall be returned approximately to its natural contours and be mounded to allow for settling and to divert surface waters.

(6) Documentation indicating that the requirements of this section have been met must be sent to the commissioner.

[As added at: 21 IR 3813.]